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AUTHOR Fowler, William J., Jr.; Furno, Orlando F.
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ABSTRACT

School finance reform plans have not been accompanied by research demonstrating that they will result in fundamental changes in educational quality. The objective of this study was to quantify school district quality measures and to assess the effects of expenditure levels on these factors. The source of data was the New York State Department of Education consolidated data base. School districts were arranged by expenditure level and the top and bottom 10 percent were assessed. Results revealed an expenditure gap between high expenditure districts and low expenditure districts of $1,150 per pupil in 1976-77. High expenditure districts had a 1/21 teacher/pupil ratio while low expenditure districts had a ratio of 1/16. The high expenditure districts had more teachers with degrees above masters and more mature teachers who stayed longer in their positions. Low expenditure schools had more pupils below the norm for their grade level in reading and math. More high expenditure students took the Regents Exams, scored high marks, and won scholarships. These findings imply that tax equity schemes must attempt to equalize both expenditures and educational quality. They may be the basis for both a new type of foundation program and a true educational production function. (Author/JM)

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THE DISEQUALIZING EFFECTS OF EXPENDITURE LEVELS UPON SCHOOL QUALITY MEASURES

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William J. Fowler, Jr.

Orlando F. Furno

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Dr. Furno is Director of the New York School Finance Law Study Project and Dr. Fowler is a Senior Research Associate in the ML Group for Policy Studies in Education, CEMREL, Inc. (a National Educational Laboratory), Chicago, Illinois.

1. Introduction

Much of the emphasis in school finance reform literature revolves about disparities in per pupil expenditures and the need to equalize the growing difference in per pupil expenditures between property wealthy and property poor school districts. Indeed, the Serrano II[1] decision which limited California school districts to no more than $200 per pupil expenditure differentials was widely applauded. Yet it has never been clear what the additional funds spent by wealthy districts buy, or that limiting districts to certain expenditure levels would produce service equality. Other researchers have studied what school districts do when recipients of windfall benefits[2] but we equate this as not very illuminating, as, for example, studies of indigent winners of state lotteries would not reveal the normal spending patterns of the poor.

What we wished to accomplish was a comparison between school districts with different expenditure levels on some sixty quality-related measures. Basically these measures were in four groups: (1) expenditure variables; (2) wealth, state aid and revenue variables; (3) teaching salaries and staffing standards; (4) pupil performance variables. In particular, we were seeking answers to the following:

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[1] Serrano v. Priest, 135 Calif. Rptr. 353, 1976. (Serrano, II)

[2] Stephen M. Barro and Stephen J. Carroll, Budget Allocation By School Districts: An Analysis of Spending for Teachers and Other Resources. Santa Monica, Calif., Rand, 1975.

-- Are the effects of given dollar amounts of disparity uniform throughout the range of spending?

-- What does the curve of spending look like once one begins to deliniate minute differences of, say, $100 per child?

-- What service and pupil performance differences occur at different levels of expenditure?

-- Using the results as a simulation of "leveling down", what impact might we expect upon high spending districts of capping their per pupil expenditures?

-- Similarly, if per pupil expenditure disparities remain, of what significance are they to service and pupil performance differences?

-- Finally, if one were to mandate similar levels of services, what would happen to expenditures per child?

We raise these questions not because we believe that vast inequities do not exist, and are perpetuated by the continuation of dollar per pupil disparities, but rather because we suspect that dollars are a poor surrogate for services in education, and that equalizing dollars might be spent more efficaciously if only we knew where the service and performance disparities between rich schools and poor schools lie, and how dollars might remedy those service differences.

1.1 Research Design

1.2 Sample Selection

School districts are an artificial creation of state legislatures, and thus exhibit uniquities of location, size, and wealth that are not well suited to selection by the statistics of chance. Thus random sampling of school districts within a state is unlikely to portray adequately their fiscal

nature. This became clear when a 10 percent survey was used in Texas to describe the relationship between school district wealth, expenditures, and median family income. The resulting inverse relationship between income and expenditures formed a crucial part of the decision in Rodriguez not to consider poor people as a suspect class.[3] This result was highly disputed by later researchers who examined all the school districts in the state, and found the opposite relationship.[4]

As a result of the possible inapplicability of sampling to our task, all the school districts in a large, relatively wealthy Northeastern State (New York) were used. The State contained over 700 local school districts, of which 705 were used in this study. The districts varied in pupil population from less than 100 pupils to more than one million and in area from less than one square mile to several hundred.

Districts were divided into several different categorical expenditure level groupings: (1) ten groups (deciles) of approximately 70 school districts per group; (2) seven groups of approximately 100 school districts per group; (3) fourteen groups of approximately 50 school districts per group; and (4) twenty-eight groups of approximately 25 school districts per group.

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[3] Rodriguez v. San Antonio Independent School District, 337 F. Supp. 280 (W. D. Texas 1971), Rev'd. 411 U.S. 1, 93 S.Ct. 1278, 36 L.Ed. 2d 16 (1973). (Footnote 38)

[4] W. Norton Grubb and Stephan Michelson, "Public School Finance in a Post-Serrano World", 8 Harv. Civ. Rights - Civ. Lib. Law Review, 550. Also see: Brischetto and Arciwiega, "Inequalities in Educational Resources: Their Impact on Minorities and the Poor in Texas and California "(NIE Grant No. NE-6-3-0062); Clune," Wealth Discrimination in School Finance," 68 N.W.U.L. Rev. 651 (1973).

Although critical ratios were computed for all school quality-related measures for all groupings between each possible pair of expenditure levels, only those for the fourteen groupings of fifty districts were reported in detail herein in Section 4. Also, for the decile groupings, only the lowest and highest decile grouping comparisons were reported.

The difficulty we encountered by comparing expenditure levels of given dollar amounts was that the comparison groups for the critical ratio test became too small to be reliable, and so fixed n sizes were used. This meant ranking the districts by expenditure per pupil and dividing by fourteen. Unfortunately, this approach ignores the changes in expenditure levels. Thus a district that spends one dollar more than another district and one that spends one hundred dollars more might be included in the same group, depending on whether or not fourteen districts were in that group. As can be seen no satisfactory way of handling this problem was found.

1.3 Data Collection -- School Quality Related Variables

Data were collected on each of 705 school districts for the 1975-76 school year.[5] Although all of the findings reported herein were based on the 1975-76 school year data, iteration of various statistical tests on partially collected 1976-77 school year data indicated that the findings based on the 1975-76 data were applicable to the 1976-77 data. These

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[5] Information Center on Education, Annual Educational Summary, New York State, 1975-76. Albany, New York: The State Education Department, 1976.

variables were grouped in terms of several broad categories involving revenue, expenditures, staff training, pupil-staff ratios, and pupil test data. Of these variables, only the following were reported on herein:

Expenditure Variables

1. Expenditure Level (current operating expenditures per pupil)
2. Total Expenditures for Instructional Services Per Pupil
3. Total Expenditures for Instructional Materials and Supplies Per Pupil
4. Total Expenditures for Textbooks Per Pupil

Wealth, State Aid, Revenue Variables

1. 1975 Full Value/1975-76 Pupils (PWADA)
2. True Tax Rate for all Educational Purposes
3. Total State Aid Per Pupil
4. Total Operating Aid Per Pupil

Teaching Salaries and Staffing Standards

1. Average Professional Salaries, Grades Kindergarten through 6
2. Average Professional Salaries, Grades 7 through 12
3. Total Professional Staff Per 100 Pupils
4. Classroom Teachers, Grades Pre-Kindergarten through 6 Per 1,000 Pupils
5. Classroom Teachers, Grades 7 through 12 Per 1,000 Pupils
6. Total Classroom Teachers Per 1,000 Pupils
7. Other Professional Staff, Grades Pre-Kindergarten through 6 Per 1,000 Pupils
8. Other Professional Staff, Grades 7 through 12 Per 1,000 Pupils
9. Total Other Professional Staff Per 1,000 Pupils
10. Percentage of Teachers with Bachelor Degree
11. Percentage of Teachers with Bachelor Degree plus 30 semester hours

12. Percentage of Teachers with Master's Degree

13. Median Number of Years Teaching in District in Which Presently Employed

Pupil Performance Variables

1. Median Score Made by 3rd Grade Pupils in the District on a Pupil Evaluation Performance Mathematics Test

2. Median Score Made by 6th Grade Pupils on a Pupil Evaluation Performance Mathematics Test

3. Median Score Made by 9th Grade Pupils on a Pupil Evaluation Performance Mathematics Test

4. Median Score Made by 3rd Grade Pupils in the District on a Pupil Evaluation Performance Reading Test

5. Median Score Made by 6th Grade Pupils in the District on a Pupil Evaluation Performance Reading Test

6. Median Score Made by 9th Grade Pupils in the District on a Pupil Evaluation Performance Reading Test

7. Percentage of 3rd Grade Students Who Scored Below a Minimum Competency Level on Mathematics Test

8. Percentage of 6th Grade Students Who Scored Below a Minimum Competency Level on Mathematics Test

9. Percentage of 9th Grade Students Who Scored Below a Minimum Competency Level on Mathematics Test

10. Percentage of 3rd Grade Students Who Scored Below a Minimum Competency Level on Reading Test

11. Percentage of 6th Grade Students Who Scored Below a Minimum Competency Level on Reading Test

12. Percentage of 9th Grade Students Who Scored Below a Minimum Competency Level on Reading Test

1.4 Statistical Analysis in The Research Design

The research design selected was a simple one. The districts were sequenced in accordance with a criterion variable. Then districts in the lowest decile were segregated as were those in the highest decile. Median values on some 90 school quality-related variables were computed for those districts in the lowest decile and compared to the median values for those districts in the highest decile. The critical ratio test[6] for median values was used to test the significance of the differences in median values between the lowest decile districts and the highest decile districts.

Two dependent variables were used for sequencing to obtain the lowest and highest decile districts: (1) expenditure level; and (2) wealth. The research design provided for separating districts by various expenditure level groupings and applying critical ratio "t" tests to median differences for the various quality-related variables studied. The same procedure was followed for separating districts by various wealth groupings.

A brief word about the organization of the rest of the paper. Part 2 discusses the changes in the fiscal setting that contributed to the demise of the Cubberley-Strayer, Haig-Mort foundation plans, and with their passage, the advent of District Power Equalizing. Part 3 reviews the court cases that have constituted the school finance reform movement and discusses their implications for the topic at hand. Part 4 presents the results of the analysis followed by a discussion of the implications of the results (Part 5).

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[6] Henry E. Garrett, Statistics In Psychology and Education, Longmans Green and Co., New York, 1951.

2. Fiscal Settings for School Expenditures

Since 1970, public school enrollments in the nation's schools have been declining,[7] yet, expenditures have continued to increase at a rate greater than inflation.[8] This appears to be a continuation of earlier growth trends. Over the more than seven decades of this century, public elementary and secondary school expenditures increased at an almost exponential rate - doubling and in some decades tripling. As can be seen from Figure 2.1, expenditures for public education have typically doubled from one decade to the next and in one instance tripled. Another way of looking at trends in public school expenditures is in terms of per pupil costs. Figure 2.2 depicts these per pupil costs.

School budget referendums and property tax increase approvals are meeting increasing resistance, as shown in California by the passage of the Jarvis-Gann referendum limiting property taxes to 1 percent of assessed value.[9]

Three explanations of the fiscal imbalance in public education are advanced.[10] First, because local school district revenues are principally derived from local property taxes (50 percent), it has been asserted that that tax has an inappropriate growth rate compared to other revenue sources, such as income taxes and sales taxes.

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[7] Kenneth A. Simon and Martin M. Frankel, Projections of Educational Statistics to 1984-85. (Washington, D.C.: NCES, 1976

[8] Mary A. Golladay, The Condition of Education, 1976 Edition, (Washington, D.C.: NCES, 1976

[9] The New York Times, June 8, 1978

[10] Walter I. Garms, James W. Guthrie, and Lawrence C. Pierce, School Finance The Economics and Politics of Public Education. Englewood Cliffs, NJ: Prentice-Hall, 1978, pp. 87-90.

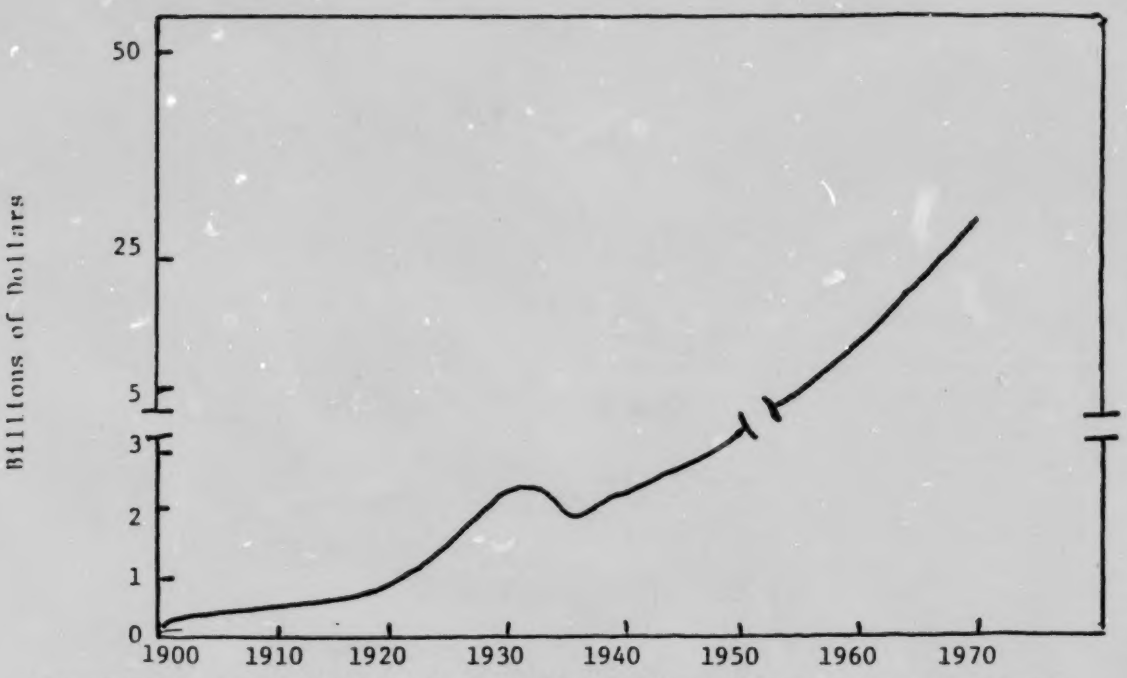

Figure 2.1. Trend in Expenditures for Public Elementary and Secondary Schools 1900 to 1970.

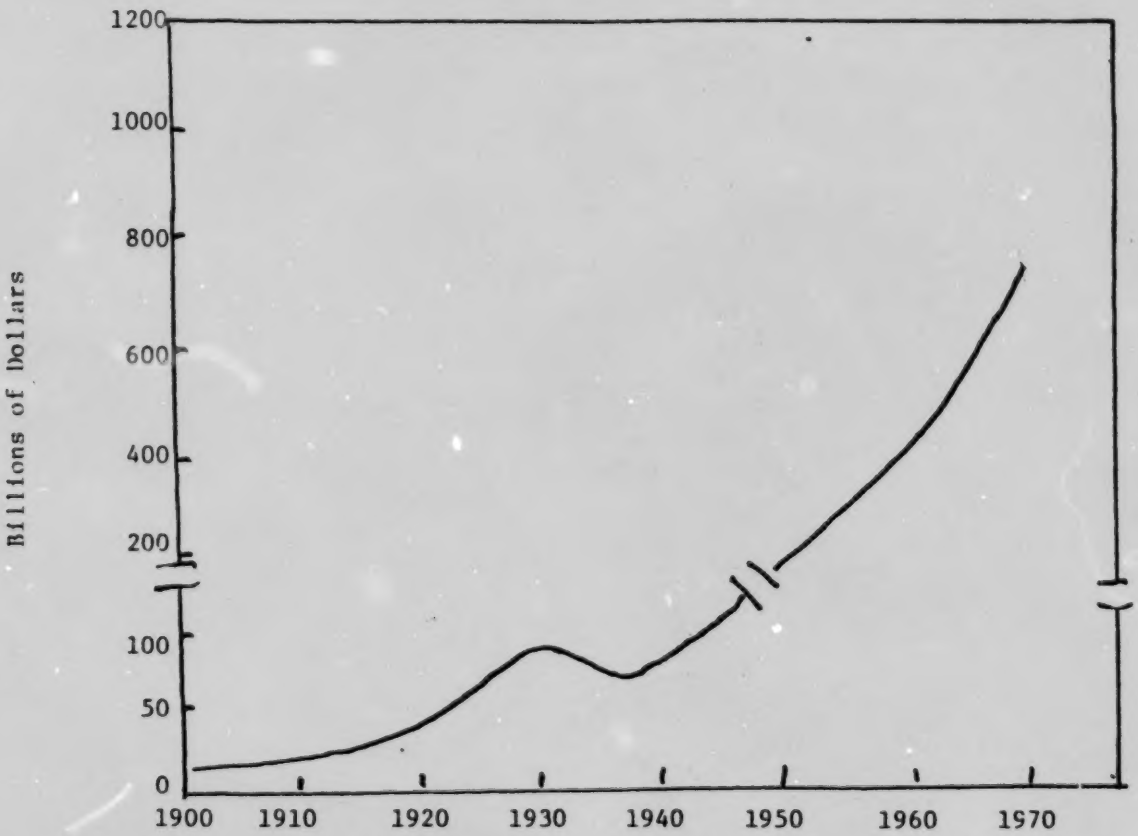

Figure 2.2. Trend in Expenditures for Public Elementary and Secondary Schools Per Pupil Enrolled from 1900 to 1970.

Others argue that since taxpayers are willing to support increases in state and federal support for education, but not local increases, that they are responding to a "fiscal illusion."[11]

Another explanation of the financial difficulties some school districts find themselves in has to do with interstate and intra-state differences in fiscal capacity. Although both federal and state funds usually are to some degree compensatory for less wealthy districts, they are only slightly so. This is particularly true for state funds, which constitute approximately 40 percent local revenues. Further, although in Southern schools federal aid approximates 20 percent or more of a local school district's revenue, it only constitutes 7 percent in Northern districts. Also, because regional differences in expenditures per child are so great, federal funds purchase more services in one area than another. If Mississippi were to try to raise the revenue of California, it would have to tax its citizens at twice the level that New York does, because of its relative lack of wealth.

The third explanation of the inadequacy of the revenue base for school districts is that the cost of education in urbanized areas is much higher, and there are larger demands upon the tax base. The urban environment causes higher prices for the same quality of educational services. Poor, illiterate students who do not speak the native language fluently populate such schools, accompanied by high levels of truancy, violence, and vandalism. City school systems tend

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[11] Anthony Downs, "An Economic Theory of Political Action in a Democracy," Journal of Political Economcy, 65 (April 1957), 135-50; Maneur Olson, Jr., The Logic of Collective Action (Cambridge, MA: Harvard University Press, 1965).

to be large and have equally large bureaucracies.[12] City systems also have fallen into disfavor with state legislatures whose power balance has shifted away from central cities as a result of the Supreme Court's "One-Man, One Vote" ruling.

Regardless of the reasoning one advances, it is clear that education has become a declining industry, with higher costs, fewer clients, a reduction in services, and less revenue.

2.1 The Effect Upon the Future of School Finance Reform

> The major 1971-1973 court decisions affecting school finance were immediately followd by change and reform facilitated by improved State fiscal conditions. State budget surpluses, swelled by greater Federal assumption of welfare costs and by Federal revenue sharing with State and local governments, permitted change and reform without confronting the issue of new and increased taxes for education. During this period, significant changes were made in some State school finance programs.[13]

The altered economic picture, with subsequent reductions in Federal aid, has blunted the success of the reform movement. The above quotation raises an interesting point: those states that moved toward reform either had budget surpluses or had not yet availed themselves of certain taxes (e.g., income) or were not yet taxing themselves to the limit of ability.

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[12] Betsy Levin, Thomas Muller, and Corazon Sandoval, The High Cost of Education in Cities (Washington, DC: The Urban Institute, 1973); also The Potomac Institute, Equity for Cities in School Finance Reform (Washington, DC: The Potomac Institute, Inc., 1973).

[13] Mary A. Golladay, The Condition of Education, 1976 Edition (Washington, DC: NCES), p. 151.

As enrollments decline, the number of staff will decline, but paradoxically, their salaries will rise even without inflation as these teachers and other staff have the longest experience, causing higher levels of expenditures to occur. Demographic changes will mean a greater number of people in the work force, and, therefore, there will be relatively more people to share school costs.

Costs are expected to rise in the future, as a result of general inflation. In 1973-74 dollars, between 1973 and 1983, costs are anticipated to rise at a rate of 36.5 percent, and per pupil costs will rise at the higher rate of 47 percent.

These increases, combined with a loss of pupils and staff, will make equalization of intra-state school district expenditures even more difficult in the future. States like New York, already taxing at maximum levels and with large budget deficits, will find it increasingly difficult to finance an increased state share of expenditures. Court cases attacking foundation plans will continue, probably successfully, forcing such changes on reluctant legislatures whose first instinct will be to simply attempt to adjust existing foundation plans. Both New Jersey and California have shown, however, that such changes are not sufficient for the criteria of the courts. What appears to be the most likely senario for the future will be a continuation of school finance reform toward equalization of intra-state school district expenditures, albeit at a slower rate than the past decade.

A larger question that remains uncertain is whether, after intra-state expenditures are equalized, the same reformers will attempt to achieve inter-state expenditure equalization. If so, and if successful, expanded Federal aid can be anticipated.

3. The Call for School Finance Reform

3.1 State School Finance Policy Issues

Despite intentions to the contrary, the disbursement of State funds is seldom a neutral undertaking. The decision to provide some services and not others, to count some students differentially, to aid districts above or below certain categories of wealth, to fund nonpublic activities or other governmental activities and thus lower the contribution to public education, all will inevitability create feelings of inequity. Such feelings are the impetus and substance behind recent court challenges to ongoing systems of State aid to public schools.

There are many issues raised by State legislation and practice in school finance, a few of which will be explored here. The first issue to confront the State is what services to fund and to whom the funds shall be distributed. Most states now provide some aid per pupil, normally far below the actual local cost of educating that child. Usually students are also differentiated according to special needs that have been identified in some non-subjective manner (i.e., achievement tests, I.Q.). Other aid programs involve construction and/or renovation of facilities and reimbursement of transportation costs. In

addition, legislatures have funded a variety of other categories, including aid for different grade levels, compensatory education, bilingual education, density or sparsity on size correction, and textbooks.

Perhaps the first major group to allege inequity if excluded from such funding schemes are nonpublic schools. Although the courts have made such aid, beyond transportation or textbook aid, exceedingly difficult,[14] legislatures have shown great ingenuity in attempting to aid such institutions.[15] Nevertheless, it demonstrates the point: What and whom should be aided are significant policy issues.

No less a controversial issue, subject to many court challenges, is the method of distribution once the issues of what programs and persons are aided has been settled. Most states utilize a formula to disburse state aid. Particularly widespread is a "foundation" plan involving flat grants to all districts and a minimum level of aid which constitutes state support. In addition, State aid increases with decreasing district wealth. However, the local leeway of a district varies considerably, so that large disparities in expenditures between districts have occurred.

Regardless of the formula utilized, however, several policy issues appear. Cities maintain that costs for other municipal sources, such as fire, police, sanitation, mass transit, constitute an additional burden on their tax mobility. One question that the State must decide, therefore, is whether or not to recognize this "municipal overburden" in its formula.

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[14] Meek vs. Pittenger, 421 US 350 (1975).

[15] P.E.A.R.L. vs. Rockefeller, 322 Fed. Supp. 678 (1971).

Another city claim is that counting students by average daily attendance rather than enrollment results in lower payments to such districts, while ignoring that the schools must be expected to be prepared to educate all on their rolls. The large absentee rate of urban school districts means additional clerical work is necessary to attempt to fulfill compulsory attendance laws. Declining enrollments in suburban districts, however, are softened by this approach.

All formulas utilize some wealth measure, and different measures express differing concepts of justice. The most common measure is equalized full valuation divided by some pupil measure. This makes cities seem richer than they are, and suburban areas poorer because land values are inflated in cities and suburbs heavily populated with children. Dividing full property value by the total population of a district produces a per capita measure of wealth which makes cities appear less wealthy, suburbs more so, and rural areas in between. Adjusting such a measure by a ratio devised by dividing district personal income by State median income results in still a third ordering, with suburbs richest, cities next, and rural areas least wealthy.[16]

Some allege that the differing wealth estimates between types of population density is simply a function of differing standards of living and cost of living. This has lead some states, e.g., Florida and Texas to establish regional adjustments to their formulas based on price differentials in different counties.

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[16] Allen Odden, "Alternative Measures of School District Wealth." Presented at the American Education Finance Conference, March 15, 1976.

The disparities in expenditures created by the foundation plan have lead to claims of inequality of educational opportunity because it is believed that program disparities result from the expenditure differences. These differences are far from minor. In 1975-76, the range in New York of expenditures was $1100 to $2050, or 53.65 percent.[17] Tax bases vary even more widely. In California, in 1969-70, the assessed value per unit of average daily attendance ranged from a low of $103 per elementary child to a peak of $952,156 per elementary child, a ratio of nearly 1 to 10,000.[18]

Whether or not money makes a difference in school performance has been hotly debated by educational authorities. Those alleging that expenditures and school facilities do not affect pupil achievement quote Coleman's EEO Study:

> Taking all these results together, one implication stands out above all: That schools bring little influence or bear upon a child's achievement that is independent of his background and general social context; that this very lack of independent effect means that the inequalities imposed upon children by their home, neighborhood, and peer environment are carried along to become inequalities with which they confront adult life at the end of school.[19]

Those who differ cite delinquincies in the Coleman research, specifically that the measures used were inadequate, that the measures were manipulated incorrectly, and that inappropriate statistical techniques were used. They quote Guthrie that:

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[17] Computed by Section 842 staff.

[18] Serrano v. Priest 135 Cal. Rptr. 353 (1976) (Serrano II).

> In short, the quality of educational services available to an individual does influence the way in which he performs in school, and that in-school performance influences significantly the opportunities available to him and the manner in which he performs in those opportunities after leaving school.[20]

As will be discussed below, the courts have tended to accept the argument that expenditures and wealth per student must be equalized. This in turn raises difficult policy decisions for the State. There are basically five ways in which the State may choose to equalize expenditures:

> (1) full State funding, with the imposition of a statewide property tax, (2) consolidation of school districts with boundary realignments to equalize assessed valuations of real property among all school districts, (3) retention of present school district boundaries with the removal of commercial and industrial property from local taxation for school purposes and taxation of such property at the State level, (4) school district power equalizing, which has as its central ingredient the concept that school districts could choose to spend at different levels but for each level of expenditure chosen the tax effort would be the same for each school district choosing such level whether it be a high wealth or a low wealth district, (5) vouchers, (6) or, of course, some combination of the above.[21]

Difficulties arise with any of these solutions. If a State plans to equalize, it must decide whether to "level up" or "level down," i.e., to either place a cap on the highest or to reduce the highest expenditure district to the lowest. This procedure and full State funding with a statewide property tax quickly are

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[20] James W. Guthrie, et al., Schools and Inequality, MIT Press, 1971, p. 108.

[21] Serrano vs. Priest 135 Cal. Rptr. 353 (1976) (Serrano II).

opposed by proponents of local control. Regional or State funding soon means regional or State bargaining with teacher unions and setting of curriculum. A legislator is loath to enact such a system when the current system makes it appear as if his efforts have resulted in State aid to his election district's schools.

Also of great concern is to what degree expenditures should be equalized. Should they all be precisely equal, or should there be variation for those students whose low socio-economic status lead Guthrie to argue that:

> ....the low SES child is impeded by factors that vary from man-nutrition and undiagnosed medical problems to the emotional damage that often accompanies a broken home. The learning environment is further handicapped by a lack of school-related educational reinforcement in the home. Under these circumstances the diagnostic and rehabilitive educational services required for lower SES children are likely to be exceedingly more costly than those needed by their higher SES counterparts.[22]

Assume for the moment that such expenditures are equalized. The gravest question confronting the State is whether or not it has equlized educational opportunity. Regardless of equal expenditure per child, will better teachers choose to teach in urban and other low socio-economic status districts? Despite the influx of additional funds to low expenditure districts, will program offerings be upgraded?

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[22]Guthrie, op.cit., pp. 147-148.

This raises another policy question. How might program equity be assessed, and what constitutes accountability. New Jersey, in attempting to implement a "through and efficient" system of schools, as mandated by the State constitution, began testing students achievement in reading and mathematics. Districts whose students do not perform satisfactorily must submit plans to the Commissioner to upgrade such students. Continued poor performance may lead to State control of the school.

Perhaps the most troublesome to the State is the issue of raising State revenues for disbursement. Legislatures must decide the percent of total costs they wish to assume versus the needs of other State services. In times of large State deficits, a sluggish economy, and great unemployment, the decision to raise enough money to correct the disparities in local school district expenditures is a difficult one.

Once having decided upon a level of revenue, the appropriate State tax must be decided upon. Most State revenues are derived from income, sales, and property taxes, with additional funds coming from State lottery sales. Lottery, sales, and property taxes are all quite regressive in nature, i.e., they tax most heavily those who have the least ability to pay. Income taxes normally are progressive in nature, taxing more heavily those who have higher incomes, although this need not be the case. New Jersey, for example, utilizes only to rates, above and below a given level, rather than the normal graduated income tax.

In summary, both the raising of State revenues and the subsequent disbursement of State funds raise difficult policy issues for legislators and educators. Despite their long history, the present foundation formula systems for distributing State funds to local school districts have increasingly been attacked as inequitable. As the problems of urban areas have mounted, and as low property value districts have had to tax themselves at increasingly greater rates to raise school revenues with per pupil expenditures far below State averages, court challenges have become common. The section below deals with the impact the courts have had in generating school finance reform.

3.2 Relevant Court Decisions

In 1971, a case arose in California in which the plaintiffs alleged that the public school financing system was unconstitutional. Three findings were sought: First,

> ....that the system, by producing substantial disparities among the various school districts in the amount of revenue available for education, denied the children equal protection of the laws under the United States and California Constitutions. (Second)... as a result of the system, the parents were required to pay taxes at a higher rate than taxpayers in many other districts in order to secure for their children the same or lesser educational opportunities. (Third)...sought a declaratory judgment that the present system was unconstitutional...(and) prayed for an order directing defendants to make a remedial allocation of school funds.[23]

The defendants filed demurrers asserting that none of the above claims stated facts to cause action. The trial court agreed, granting dismissal, but the

[23] Serrano vs. Priest 5 Cal. 3d 584 (August 30, 1971).

California Supreme Court reversed, and stated that the issue should go to trial. The California Supreme Court held that if the trial court found the facts supporting the allegations, then the school finance system is unconstitutional.

The court based its finding on extension and application of previous United States Supreme Court findings in desegregation,[24] criminal law,[25] and voting rights.[26]

> The United States Supreme Court has employed a two-level test for measuring legislation classifications against the equal protection clause. In the area of economic regulations, the high court has exercised no restraint, investigating with a presumption of constitutionality and requiring merely that distinctions drawn by a challenged statute bear some rational relationship to a conceivable legitimate State purpose....On the other hand, in cases involving 'suspect classification' or touching on 'fundamental interest',....the court has adopted an attitude of active and critical analysis, subjecting the classification to strict scrutiny... Under the strict standard applied in such cases, the State bears the burden of establishing not only that it has a compelling interest which justifies the law but that the distinctions drawn by the law are necessary to further its purpose.[27]

The California Supreme Court, applying these tests, concluded that "....the destructive and priceless function of education in our society warrants,

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[24] Brown vs. Board of Education 347 U.S. 483 (1954).

[25] Griffin vs. Illinois 351 U.S. 12, 76 SLT 585 (1956); Williams vs. Illinois 399 U.S. 235, 90 S.Ct. 2018 (1970); Douglas vs. California 372 U.S. 353 83 S.Ct. 814 (1963).

[26] Harper vs. Virginia State Board of Elections 383 U.S. 663, 86 S.Ct. 1079 (1966); Cipriano vs. City of Auma 395 U.S. 701 89 S.Ct. 1897 (1969); Kramer vs. Union School District 395 U.S. 621 89 S.Ct. 1886 (1969).

[27] Serrano vs. Priest 135 Cal. Rptr. 353 (1976) (Serrano II).

indeed compels, our treatment of it as a fundamental interest." Further, because the discrimination in question was made on a basis of wealth, it involved a "suspect classification." This led the court to apply a 'strict scrutiny' test. Although the defendants asserted that the State had a "compelling interest" to allow the local school district the authority to change how much it spends for educating its children. The court rejected this argument as a "cruel illusion for the poor school districts," due to the way in which the funding system operated.

> The poor district cannot freely choose to tax itself into an excellence which its tax rolls cannot provide. Far from being necessary to promote local fiscal choice, the present financing system actually deprives the less wealthy district of that option.[28]

The court further ruled that if the trial court did find the system unconstitutional, it could provide for the enforcement of the judgment in such a way as to permit an orderly transition to a constitutional system, until which time the existing system would remain operable.

Shortly thereafter, a United States District Court in Minnesota accepted the reasoning in Serrano and concluded that "there is little or no difference between the factual allegations in this case and those in Serrano...the reasoning of the California court on this point is completely persuasive and this court adopts it as its own."[29] Thus the court declared that the Minnesota system of public school financing which made spending per pupil a function of the school district's wealth violated the equal protection guarantee of the Fourteenth Amendment.

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[28] Serrano vs. Priest 135 Cal. Rptr. 343 (1976) (Serrano II).

[29] Van Dusartz v. Hatfield 334 F.Supp. 870 (1971).

Interestingly, the court did not need evidence regarding whether or not money makes a difference.

> While the correlation between expenditure per pupil and the quality of education may be open to argument, the court must assume now that it is high. To do otherwise would be to hold that in those wealthy districts where the per pupil expenditure is higher than some real or imaginary norm, the school boards are merely wasting the taxpayers' money. The court is not willing to so hold, absent some strong evidence.[30]

A federal three judge court in Texas soon followed with a similar conclusion. However, that case was appealed and reached the United States Supreme Court. Suprisingly, the court rejected the reasoning of Serrano. Rather than holding that education was a "fundamental right," the court stated that since there was no showing of any definable category of 'poor' persons that was discrimanted against, or that children were deprived of public education, or that there was any discrimination based upon relative family income within districts, and since district wealth discrimination against residents of less wealthy districts did not meet the criterial of a suspect class, the strict judicial scrutiny test did not apply. Thus, the traditional standard of review under the equal protection clause, i.e., a showing that the State's action had a rational relationship to legitimate State purposes, would be sufficient. Thus, under the traditional equal protection test, the Texas financing system, despite its conceded unperfections, rationally furthered a legitimate State purpose. Because the system provided for State contributions to each district, assured a basic education for every child, permitted local control and participation by local taxation, and was similar systems in virtually every other state, the system was constitutional.

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[30] Van Dusartz vs. Hatfield 334 F.Supp. 874 (1971).

> In conclusion, the court stated that the need is apparent for reform in tax systems which may well have relied too long and too heavily on the local property tax. And certainly innovative new thinking as to public education, its methods and its funding, is necessary to assure both a higher level of equality and greater uniformity of opportunity. These matters merit the continued attention of scholars who already have contributed much by their challenges. But the ultimate solutions must come from lawmakers and from the democratic pressures of those who elect them.[31]

Although the Rodriguez decision would seem a severe setback to those arguing for school finance reform, the proponents of reform have simply shifted their focus to the State courts, and relied upon the equal protection clauses and education provisions of the challenged State's constitution.

New Jersey is one State in which the finance system was challenged. The State Constitution provided for:

> ....the maintence and support of a thorough and efficient system of free public schools for the instruction of all the children in this State between the ages of five and eighteen years.[32]

The court interpreted 'thorough and efficient' as

> The goal of a thorough and efficient system of free public schools shall be to provide to all children in New Jersey, regardless of socio-economic status or geographic location, the educational opportunity which will prepare them to function politically, economically, and socially in a democratic society.[33]

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[31] San Antonio Independent School District vs. Rodriguez 411 U.S. 1 (1973).

[32] N.J.S.A. 18A: 7A-4.

[33] Robinson vs. Cahill 62 NJ at 490, 491 (1973).

Simply a month after the Rodriguez decision, the New Jersey Supreme Court decided that

> The question whether the equal protection demand of our State Constitution is offended remains for us to decide. Conceivably, a State's Constitution could be more demanding (than the federal)...We then go to the question whether our State guarantee of equal protection is offended.[34]

The court refused to apply the State guarantee of equal protection to the case.

> We hesitate to turn this case upon the State equal protection clause. The reason is that the equal protection clause may be unmanageable if it is called upon to supply categorical answers in the vast area of human needs, choosing those which must be met and a single basis upon which the State must act.[35]

However, the court did rely upon the 1975 Amendment to the New Jersy Constitution cited above.

> ....It cannot be said that the 1875 Amendments were intended to ensure statewise equality among taxpayers. But we do not doubt that an equal educational opportunity for children was precisely in mind. The mandate that there be maintained and supported 'a thorough and efficient system of free public schools for the instruction of all the children in the State between the ages of five and eighteen years' can have no other impact.[36]

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[34] Robinson vs. Cahill 62 NJ at 490, 491 (1973).

[35] Ibid, at 492.

[36] Ibid, at 513.

The court agreed with the trial court that the constitutional demand had not been met because of discrepancies in the dollar input per child. The court reluctantly accepted that criteria because the State Department of Education had never "spelled out the content of the educational opportunity the Constitution requires."

> Without some such prescription, it is even more difficult to understand how the tax burden can be left to local initiative with the hope that statewide equality of educational opportunity will emerge.[37]

The court also made clear that the constitutional mandate does not require equal expenditures.

> We should not be understood to mean that the State may not recognize differences in area costs, or a need for additional dollar input to equip classes of disadvantaged children for the educational opportunity. Nor do we say that if the State assumes the cost of providing for constitutionally mandated education, it may not authorize local government to go further and to tax to that further end, provided that such authorization does not become a deviation diluting the State's mandated responsibility.[38]

As a result of the Serrano decision cited above, the California legislature enacted changes in the foundation plan designed to counter the original complaint. The trial court permitted the complaint to be amended to include the newly enacted statute, which still relied heavily upon the property tax. On December 30, 1976, the California Supreme Court held the new law unconstitutional.

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[37] Robinson vs. Cahill 62 NJ at 490, 491 (1973).

[38] Ibid; at 520.

The legislature had attempted to adjust equalization aid and tax rate limitations and overrides and substantially increase the foundation program to bring the financial system into constitutional conformity. It was hoped by a system of spending 'caps' and increases in the foundation plan to produce 'convergence.'

The court found the system flawed.

> ...It will allow total 'convergence' between high spending revenue limits and rising foundation levels only after many, perhaps as many as 20, years--even assuming no voter overrides (emphasis in original)...Even when the 'convergence' has run its course, there will continue to be a substantial unequality between basic aid and equalization districts, again assuming no voted overrides, due to the fact that the former districts will be able to achieve the foundation level at a tax rate which is less than the computational rate.[39]

The California Court then concluded that 'substantial disparities in expenditures per pupil among school districts cause and perpetuate substantial disparities in the quality and extent of availability of educational opportunities.' Although the court indicated that equal expenditures were not required, the large discrepancies had to be reduced.

Perhaps the most interesting aspect of the decision is that irrespective of the Rodriguez case, the California Supreme Court applied the "fundamental interest--suspect classification" test.

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[39] Serrano vs. Priest 135 Cal. Rptr. 353 (1976) (Serrano II).

> Nor can the additional fact...that certain of the high court's former decisions...may not be expected to thrive in the shadow of Rodriguez cause us to withdraw from the principles we there announced (in Serrano I) on State as well as federal grounds...For these reasons, then, we now adhere to our determinations, first made in Serrano I, that...because the school financing system here in question has been shown by substantial and convincing evidence produced at trial to involve a suspect classification...and because that classification affects the fundamental interest of the students of this State in education, we have no difficulty in concluding today, as we concluded in Serrano I, that the school financing system before us must be examined under our State Constitutional provisions with that strict and searching scrutiny appropriate to such a case.[40]

The court went on to describe workable, practical and feasible alternative methods which the legislature could have taken.

> Instead it has undertaken to create a school financing system which, by making the quality of educational opportunity available to a student dependent upon the wealth of the district in which he lives, is manifestly inconsistent with fundamental constitutional provisions guaranteeing the equal protection of the laws to all citizens of this state. That system, we hold today, can no longer endure.[41]

Thus it appears that since Rodriguez, school finance challenges will take place in state courts, subject to their interpretation of the applicable criteria. The Robinson and Serrano cases indicate that some of those criteria are: the provisions for education as stipulated by the State constitution; equal protection clauses of the State constitution; the discrepancy of expenditure and the discrepancies of wealth between districts.

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[40] Serrano vs. Priest 135 Cal. Rptr. 353 (1976) (Serrano II).

[41] Ibid.

Currently pending in New York State is Levittown vs. Nyquist in which the plaintiffs allege several courses of action:

> 1. The statute arbitrarily and erronneously curtails state assistance to the intervening urban school districts on the ground that they are richer than other districts in local taxable resources for financing education, whereas in fact they are rendered poorer in such resources because of greater municipal service burdens and education costs.
>
> 2. The statute arbitrarily and erroneously uses pupil attendance rather than pupil enrollment, both in measuring per pupil local wealth and aggregate state aid, to the prejudice of the intervening urban districts with high rates of student absenteeism.
>
> 3. The state's scheme fro financing public elementary and secondary schools violates the State Constitution's Equal Protection Clause by making the allocation of educational resources among the children of the state a function of the real property wealth of the school district in which the children's schools are located.
>
> 4. Said method of financing schools violates the Education Article of the State Constitution because the State has created more than seven hundred separate school districts...which are disparately endowed with real property wealth and has permitted the allocation of the State's educational resources to be determined by the fortuitous circumstances of wealth distribution among the districts and without regard to sound educational criteria or objectives.[42]

Thus, another case will soon be decided by a State Supreme Court. Certainly the plaintiffs have alleged violations similar to those successful in Serrano II and Robinson. Whether or not the plaintiffs in Levittown will be equally successfull awaits the test of time.

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[42] Levittown v. Nyquist, (brief).

3.3 Changes in the Nature of School Finance

Serrano, Rodriguez, and Robinson are only the tip of a large iceberg of cases throughout the nation. From 1971 to 1974, "a total of 27 school finance court cases were filed in 23 states."[43] The State legislatures have responded differentially to these challenges. However, several patterns have emerged which are recognizable.

There has been a movement away from general aid formulas to categorical aid. Categorical programs seem to permit less local discretion in program choices, expenditure and staffing arrangement, and thus are favored by states attempting to equalize expenditures. Reforming states seem to have focussed upon five goals: reducing intra-state per pupil expenditure disparities among districts; decreasing reliance upon local property taxes as a school revenue generator; spending caps to permit low expenditure districts to catch higher spending districts; required local programming in such 'special need' areas as handicapped, vocational, bilingual, transportation.[44]

Some of the effects of these court cases have been an increased state share in the financing of local school districts. In addition, new state aid has been keyed to plans for lower property taxes. Expenditure disparities have been reduced through restrictions on local leeway. Categorical funding has increased and targeted funds have had accountability measures providing property tax reflied for such groups as the poor, elderly, fixed income, and apartment dwellers have been enacted. Finally, the main device relied upon to equalize tax efforts has been a statewide property tax.

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[43] Mary A. Golladay, The Condition of Education, 1976. National Center for Education Statistics, Washington, DC, p. 145.

[44] Ibid, p. 150.

4. The Statistical Results

Table 1 contains the results of the critical ratio "t" tests for the lowest and highest decile districts ordered by expenditure level.

4.1 Disequalizing Effects on School Quality of Expenditures at Different Cost Levels

We previously described the disequalizing effects of State aid formulas upon low expenditures versus high expenditure districts. By means of critical ratio tests, ("t" tests), some 90 school quality related variables were evaluated. This section has as its objective to assess the effects of different levels of per pupil expenditures upon a number of school quality related variables. The assumption was that significant differences in school quality related variables created significant inequalities in educational opportunities for children. For example, the effects of significant expenditure level differences show up in monies expended for instructional services. The funds expended for instructional services manifest themselves into class size, staff ratios, staff salaries, textbooks, library books, and audio-visual materials and equipment--items extremely important to the teaching and pupil learning processes.

To assess the disequalizing effects of expenditure level required that school districts be grouped in accordance with their expenditure levels. Data from 705 school districts in New York State for the 1975-76 school year were utilized. Three different categorical expenditure level groupings were used:

TABLE 1

MEDIAN, STANDARD ERROR OF THE MEDIAN, AND CRITICAL RATIO (T-TEST) COMPARISONS OF SELECTED VARIABLES FOR NEW YORK STATE SCHOOL DISTRICTS ORDERED BY EXPENDITURE LEVEL, 1975-76 SCHOOL YEAR

VARIABLE		FIRST DECILE			TENTH DECILE			CRITICAL
No.	Name	Median Value	Cases	Std. Error of Median	Median Value	Cases	Std. Error of Median	RATIO (T - Test)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
				EXPENDITURE VARIABLE				
001	Expenditure Level	1148	70	8.64	2538	71	67.84	20.33a
006	Total Exp Instr Svces/TAPU	879.87	70	12.36	1843	71	107.59	8.89a
007	Total Exp Instr Mat & Sup/TAPU	70.11	70	2.91	79.92	71	8.75	1.06
008	Total Exp Textbooks/TAPU	10.43	70	0.33	13.87	71	1.22	2.72a
				WEALTH, STATE AID, REVENUE VARIABLES				
009	1975 FV/1975-76 RWADA	27272	70	1299	98841	71	13986	5.09a
010	True Tax Rate All Educ Purps	12.70	70	0.50	22.26	71	1.10	7.88a
064	Total State Aid/TAPU	1045	70	16.58	521.68	71	24.79	-17.55a
065	Total Operating Aid/TAPU	901.98	70	13.15	406.37	71	22.98	-18.72a

NOTE: The letters "a" indicates significant difference at the 1% level of significance; "b" at the 2% level of significance; "c" at the 5% level of significance.

TABLE 1 (Continued)

MEDIAN, STANDARD ERROR OF THE MEDIAN, AND CRITICAL RATIO (T-TEST) COMPARISONS OF SELECTED VARIABLES FOR NEW YORK STATE SCHOOL DISTRICTS ORDERED BY EXPENDITURE LEVEL, 1975-76 SCHOOL YEAR

VARIABLE		FIRST DECILE			TENTH DECILE			CRITICAL RATIO
No.	Name	Median Value	Cases	Std. Error of Median	Median Value	Cases	Std. Error of Median	(T - Test)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	TEACHING SALARIES AND STAFFING STANDARDS							
025	Avg Salaries K-6	10299	70	243.61	16832	71	570.11	10.53a
026	Avg Salaries 7-12	11248	70	359.02	18072	71	1128	5.76a
018	Total Prof Staff/WADA	53.62	70	0.74	73.11	71	3.00	6.31a
019	Classroom PK-6/ADA	48.68	70	0.86	62.81	71	2.14	6.13a
020	Classroom 7-12/ADA	55.60	70	1.18	70.52	71	4.91	2.95a
021	Total Classroom/WADA	47.82	70	0.66	62.13	71	2.43	5.68a
022	Other Prof PK-6/ADA	2.66	70	0.42	7.63	71	1.12	4.16a
023	Other Prof 7-12/ADA	5.60	70	0.57	10.68	71	1.16	3.92a
024	Total Other Prof/WADA	5.60	70	0.37	10.52	71	0.97	4.73a
031	Bachelor Degree	48.85	70	1.65	15.69	71	1.60	-14.44a
032	Bachelor +30	21.87	70	1.15	13.83	71	1.36	- 4.51a
033	Master's Degree	23.77	70	1.59	39.41	71	1.67	6.78a
037	Yrs. Teaching in Dist. 50th Percentile	6.00	70	0.19	8.00	71	0.40	4.55a

NOTE: The letters "a" indicates significant difference at the 1% level of significance; "b" at the 2% level of significance; "c" at the 5% level of significance.

TABLE 1 (Continued)

MEDIAN, STANDARD ERROR OF THE MEDIAN, AND CRITICAL RATIO (T-TEST) COMPARISONS OF SELECTED VARIABLES FOR NEW YORK STATE SCHOOL DISTRICTS ORDERED BY EXPENDITURE LEVEL, 1975-76 SCHOOL YEAR

VARIABLE		FIRST DECILE			TENTH DECILE			CRITICAL RATIO
No.	Name	Median Value	Cases	Std. Error of Median	Median Value	Cases	Std. Error of Median	(T - Test)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	PUPIL PERFORMANCE VARIABLES							
042	Pep Median Score Math 3rd Grd	31.95	70	0.71	38.50	71	0.79	6.16a
043	Pep Median Score Math 6th Grd	30.21	70	0.57	34.00	71	0.78	3.91a
044	Pep Median Score Math 9th Grd	40.72	69	0.61	45.50	57	1.21	3.51a
045	Pep Median Score Rdng 3rd Grd	29.30	70	0.71	34.93	71	0.73	5.53a
046	Pep Median Score Rdng 6th Grd	34.82	70	0.35	36.55	71	0.56	2.62b
047	Pep Median Score Rdng 9th Grd	35.30	69	0.30	37.23	57	0.60	2.87a
048	Pep Sto Deviation Math 3rd Grd	11.18	70	0.16	10.78	71	0.15	-1.82
054	Pep % Bel Min Cmp Math 3rd Grd	14.36	70	1.27	7.49	71	1.08	-4.13a
055	Pep % Bel Min Cmp Math 6th Grd	20.39	70	1.10	15.14	71	1.63	-2.67a
056	Pep % Bel Min Cmp Math 9th Grd	24.03	69	1.28	19.79	57	2.14	-1.70
057	Pep % Bel Min Cmp Rdng 3rd Grd	10.23	70	1.29	5.00	71	1.02	-3.18a
058	Pep % Bel Min Cmp Rdng 6th Grd	24.47	70	1.61	18.09	71	1.79	-2.64b
059	Pep % Bel Min Cmp Rdng 9th Grd	28.28	69	1.35	20.00	57	2.41	-3.00a

NOTE: The letters "a" indicates significant difference at the 1% level of significance; "b" at the 2% level of significance; "c" at the 5% level of significance.

(1) school districts were divided into 7 groups of approximately 100 districts per group; (2) school districts were divided into 14 groups of approximately 50 districts per group; and (3) school districts were divided into 28 groups of approximately 25 districts per group. Although critical ratios were computed for all quality related variables between each possible pair or expenditure groupings, only those for the 14 groupings were reported herein. Table 1 has ordered a number of quality related variables by expenditure level for the lowest and uppermost deciles. Median values, standard error of the median, number of cases, and the critical ratios (t test) for the difference of medians are shown.

4.2 The Disequalizing Effects of Expenditure Level Upon School Quality Related Expenditures Per Pupil

High expenditure districts (tenth decile) spent $2,538 per pupil and low expenditure districts (first decile) $1,148--a difference of $1,390 per pupil. High expenditure districts spent 2.2 times more than low expenditure districts. This difference is highly significant. Such an expenditure level difference can be translated into more funds for instructional services, textbooks, library books, materials and supplies, number of classrrom teachers, salaries, teaching experience, and educational training, in high compared to low expenditure districts. For example, high expenditure districts spent $964 per pupil more for instructional services, $10 per pupil more for instructional materials and supplies, and $3.44 per pupil more for textbooks than low expenditure districts--such differences all being significant at the .01 level of significance.

4.3 The Disequalizing Effects of Expenditure Level Inre to Wealth, Revenue, and State Aid

As would be expected high expenditure districts are considerably wealthier than low ones--3.62 times wealthier. High expenditure districts (tenth decile) have a median wealth of $98,841 per pupil, compared to $27,272 for low expenditure districts (first decile).

With respect to tax rates or local effort to support education, low expenditure districts had a median true tax rate for all educational purposes or $12.70 per $1,000 of full property valuation compared to $22.26 for high expenditure districts - a rate only 57 percent as high. However, low expenditure districts must make a higher local effort to support their pupil transportation program and their debt service program than high expenditure districts--$1.12 true tax rate compared to $0.37 for pupil transportation, and $1.28 true tax rate compared to $1.19 for debt service. Low expenditure districts in New York State do not levy as high a true tax rate for all general fund purposes as do high expenditure districts. Low expenditure districts (first decile) levied a true tax rate of $10.05 compared to $20.34 for high expenditure districts (tenth decile)--a rate only 49 percent as high. Interestingly, applying these median tax rates to the median full property values of the low and high expenditure districts yields $288 per pupil enrolled for low expenditure districts and $2,299 per pupil enrolled for the high expenditure districts. State aid to low expenditure districts averages $1,003 per pupil for general operating expenses and for high expenditure districts $501 per pupil. Totalling state aid and

locally raised taxes yields for low expenditure districts $1,291 per pupil for general operating expenses and $2,800 per pupil for high expenditure districts. Thus, on average, the local-state relationship for funding general operating expenses in the school districts of New York has created a difference of $1,509 per pupil between low and high expenditure districts.

4.4 The Disequalizing Effects of Expenditure Level Inre to Teacher Characteristics

Low expenditure districts (first decile) employed on the average 53.62 professional staff members per 1,000 pupils (WADA).[45] High expenditure level districts (tenth decile) employ 73.11 professional staff members per 1,000 pupils--1.4 times as many as low expenditure districts. An analysis of staffing ratios can reveal insights into state and local policies with respect to such concerns as class size at elementary versus secondary levels, apportionment of staff between elementary and secondary instructional programs, and the relationship between staff adequacy and salaries.

Low expenditure districts employ 48.68 classroom teachers per 1,000 pupils (EADA)[46] compared to 55.60 classroom teacher per 1,000 pupils (secondary average daily attendance, SADA).[47] On the other hand, high expenditure districts engage 62.81 classroom teachers per 1,000 pupils (EADA) and 70.52 at the secondary level (grades 7-12).

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[45] Weighted average daily attendance pupil unit is defined as: this is determined by applying the following weightings to the average daily attendance: half-day kindergarten, 0.50; full-day kindergarten and grades one through six, 1.00; grades 7-12, 1.25. For aid purposes the higher of 3-year average (base year and two previous years) or the base year WADA.

[46] Elementary average daily attendance covers pupils in pre-kindergarten, kindergarten (half-day and full-day), and grades 1 to 6 educational programs inclusive.

[47] Secondary averages daily attendance covers pupils in grades 7 to 12 educational programs inclusive and are unweighted.

Whether districts possess high or low expenditure levels, they invariably allocate more classroom teachers per 1,000 pupils to secondary rather than elementary programs. Yet there is a great difference between high expenditure districts diverting more staff into secondary rather than elementary programs and low expenditure districts doing so. For example, as previously indicated low expenditure districts employ 48.68 classroom teacher per 1,000 pupils (EADA) but high expenditure districts engage 62.81--14.13 more classroom teachers per 1,000 pupils. While staffing adequacy cannot be translated precisely into class size statistics, nevertheless, the measure's inverse yields valuable clues concerning class size statistics. In the low expenditure districts pupils per classroom teacher for elementary school programs are around 21 pupils per teacher but in high expenditure districts, 16 pupils per teacher; for secondary schools, the pupil-teacher comparisons are 18 pupils per teacher for low expenditure districts and 14 for high ones.

With respect to professional staff members other than classroom teachers, school districts have opted to employ higher ratios at the secondary rather than the elementary level--in fact, low expenditure schools (first decile) employ 2.1 times as many and high expenditure schools 1.4 times as many. The reason the staffing ratios between elementary and secondary schools differ less for the high expenditure districts than for the low expenditure schools is the high staffing ratios that already exist in the high expenditure secondary schools. For example, high expenditure districts engage 10.68 nonclassroom professional staff members per 1,000 pupils in secondary schools compared

to 5.60 in low expenditure schools--almost twice as many. At the elementary level, the statistics are similar. High expenditure districts have staffing ratios of 7.63 compared to 2.66 for low expenditure ones--almost three times more. Clearly, low expenditure districts are forced for whatever reasons to staff their secondary schools at the expense of their elementary schools.

Not only do the high expenditure schools districts have richer staffing ratios at both the classroom teacher and supporting professional staff levels but they also pay higher salaries. High expenditure districts pay their elementary staff on the average salaries of $16,832 compared to $10,299 for low expenditure districts. At the secondary level, the statistics are $18,072 compared to $11,248.

Salaries manifest themselves into several important measures--degree status, years of teaching experience, and maturity of the satff.

Salary levels in New York State school districts were not so low as to result in measurable numbers of teachers being employed with no bachelor's degree. This could be more a function of supply and demand than salary levels. In the main, in New York State there is an oversupply of teachers at the very time that most school districts are decreasing or remaining constant in pupil enrollments. Thus, school districts in New York State are in a position to employ degree status teachers regardless of salary attraction. Low expenditure districts do employ larger numbers of persons with bachelor degrees and bachelor

degrees plus 30 hours of additional academic training than do high expenditure districts--for bachelor degrees, 48.85 compared to 15.69 percent; and for bachelor degree plus 30 hours, 21.87 compared to 13.83 percent. However, the high expenditure schools hire 39.41 percent of professional employees with masters degrees compared to 23.77 percent for low expenditures districts. The comparative statistics for masters degree plus 30 hours of additional training are 25.24 to 3.84 percent.

Summarizing the teacher characteristics measures reflects the facts that high expenditure districts compared to low expenditure districts have significantly higher professional staff ratios both at the elementary and secondary levels, probably have lower class sizes, pay significantly higher salaries, have better trained teachers, experience less teacher turnover, and possess more mature staffs.

4.5 The Disequalizing Effects of Wealth Inre to Pupil Performance Measures

Some educators would argue that expenditure level, salaries, class size, and teacher characteristics are only surrogate measures and are not greatly indicative of school excellence. Standards of judging quality education should be based upon pupil performance.

Pupil achievement test scores are only one measure of a school's educational output. Moreover, the data peresented on pupil achievement in reading and

mathematics should be tempered by differences in innate pupil ability and in the overall atmosphere of the pupil's home. The Fleischmann Report[48] declared that "studies of school performance show a significant and consistent correlation between test scores or class rank and socioeconomic status." Such measures were not available to ameliorate pupil test achievement test scores.

New York State administers under its Pupil Evaluation Program (PEP) standardized tests in reading and mathematics. These tests are given to pupils in grades 3, 6, and 9 in each school in New York State. Pupils scored lower in reading and mathematics in low expenditure districts (firs decile) than did pupils in high expenditure districts (tenth decile). Moreover, low expenditure districts had significantly greater percents of pupils below minimum competency standards[49] in mathematic and reading than did pupils in high expenditure schools. For example, in low expenditure schools, 14.36 percent of the pupils on average were below minimum competency in mathematics at grade 3 compared to 7.49 percnet in high expenditure districts; at the sixth grade level the corresponding comparative statistics were 20.39 to 15.14 percent; and at the ninth grade level, 24.03 to 19.79 percent. With respect to reading, a similar picture emerges. More pupils in low compared to those in high expenditure districts scored below minimum competency in reading: 10.23 to 5.00 percent in grade 3; 24.47 to 18.09 percent in grade 6; and 28.28 to 20.00 percent in grade 9.

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[48] Manly Fleischmann, Chairman, Report of the New York State Commission on the Quality, Cost, and Financing of Elementary and Secondary Education, the State Education Department, Albany, NY, 1972.

[49] In the Pupil Evaluation Program (PEP) in New York State, a minimum competency standard is defined as pupils who have scored under their most recent acceptable test two grade levels below the norm for the grade level in which such pupils were enrolled in reading or mathematics.

Figure 4.1 depicts the relationship for true tax rate on equlized property assessments and expenditure level. In the main, as tax rates increase so do expenditure levels. This relationship holds true until per pupil expenditures exceed about $2200. This is because very high per pupil expenditure districts are also very wealthy, and therefore, need not levy unduly high taxes to obtain very high expenditure levels. Of the 91 possible group comparisons concerning true tax rates, 68 were significantly different.

Figure 4.2 shows the relationship between wealth and expenditure level. The relationship is a high and positive one and not convoluted at the uppermost values as is the case with the true tax rates. Of the 91 possible group comparisons, 66 were significantly different.

As indicated earlier, expenditure level is the resultant of State and local policy decisions regarding levels of taxation and methods of distribution of funds. As can be seen in Figure 4.3 New York State basically distributes more aid per pupil to low compared to high expenditure districts. For example, districts expending about $2600 per pupil get about $406 per pupil from the State whereas districts spending about $1130 per pupil receive about $902 per pupil. However, New York has over the years distributed its funds in such a way that coupled with local spending options has resulted in an ever-widening expenditure level gap. This is evidenced by Figure 4.4 the expenditure level gap in New York State.

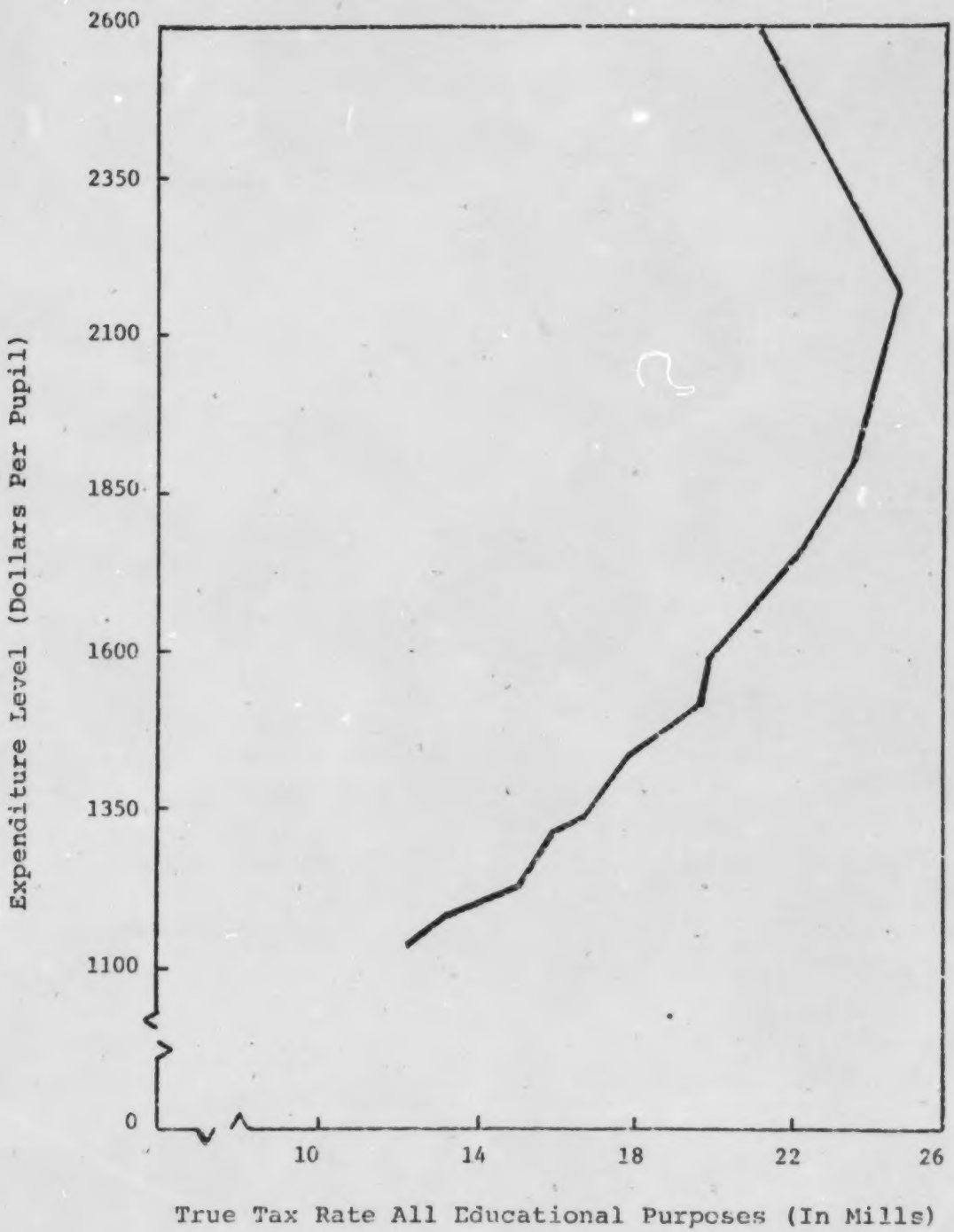
2600
2350
2100
1850
1600
1350
1100
0
Expenditure Level (Dollars Per Pupil)
10
14
18
22
26
True Tax Rate All Educational Purposes (In Mills)

FIGURE 4.1

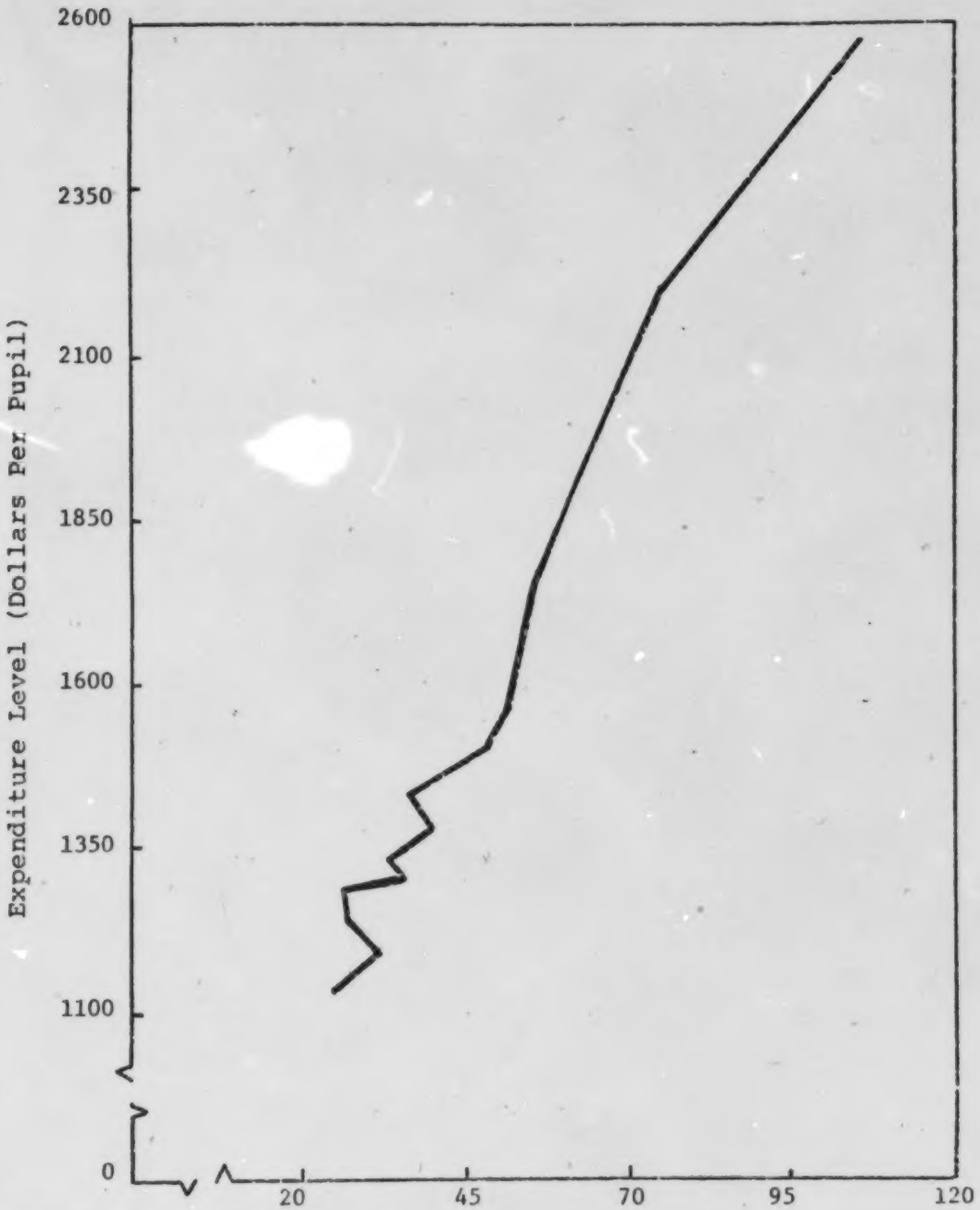
2600
2350
2100
1850
1600
1350
1100
0
Expenditure Level (Dollars Per Pupil)
20
45
70
95
120
Wealth (Full Value Per Pupil),
(In Thousands of Dollars)

FIGURE 4.2

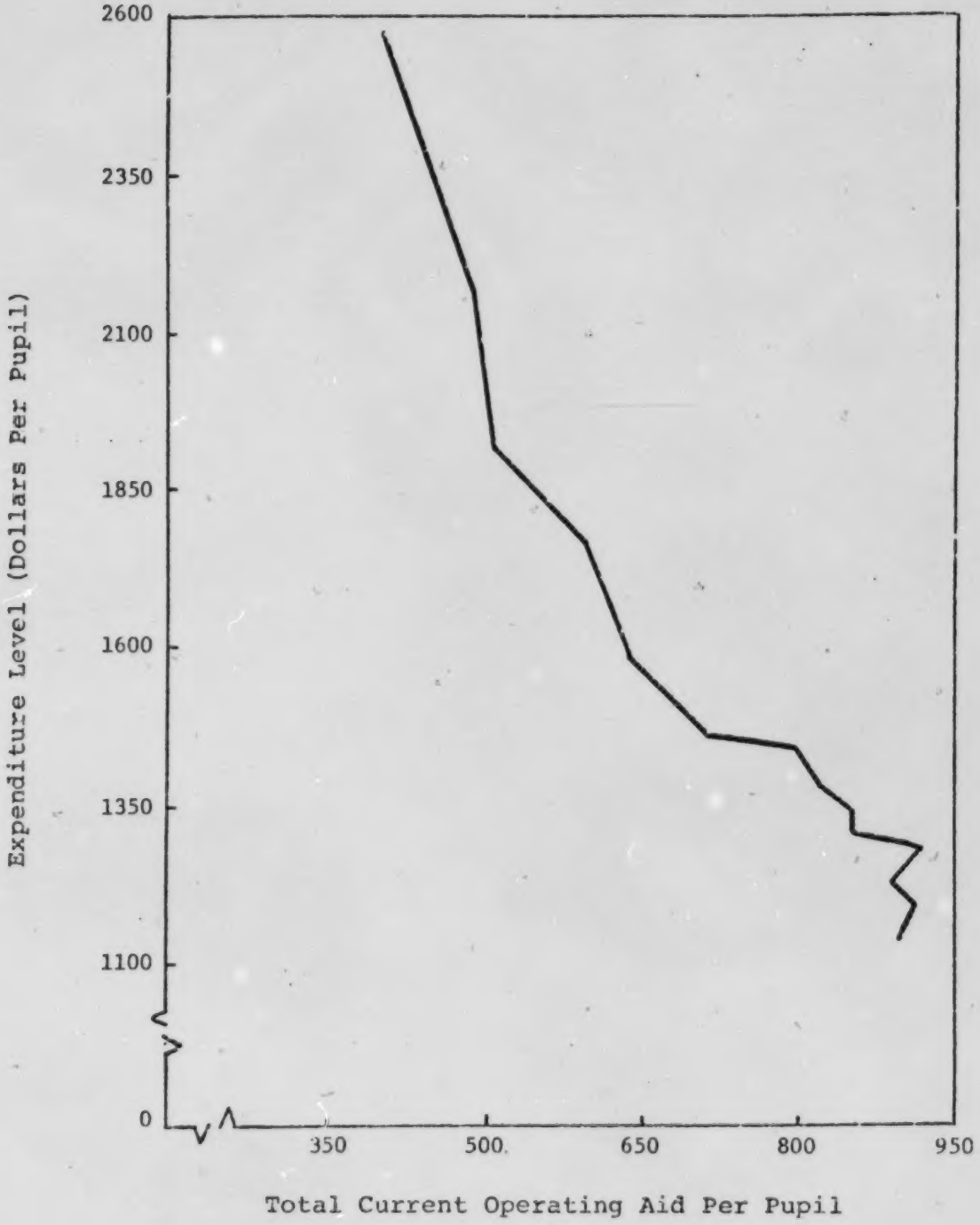
2600
2350
2100
1850
1600
1350
1100
0
Expenditure Level (Dollars Per Pupil)
350
500
650
800
950
Total Current Operating Aid Per Pupil

FIGURE 4.3

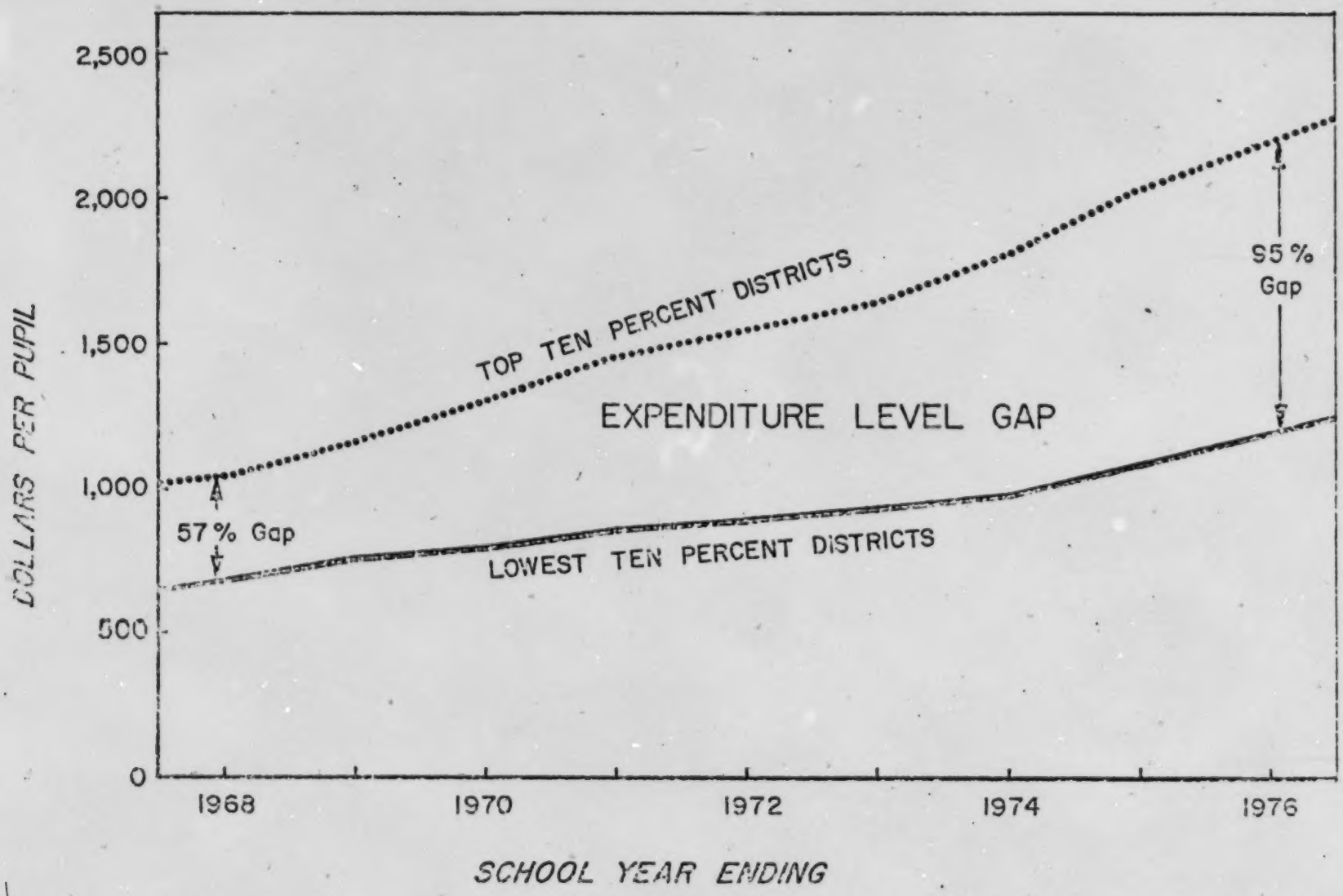

Figure 4.4 The Expenditure Level Gap, New York State School Districts, 1967-1977.

The fourteen expenditure level groups, the median expenditure level in each group, and the number of cases in each group are enumerated in Table 2. Table 3 contains the absolute cost per pupil difference between the various groups. There were 91 intergroup comparisons for a fourteen group metrix. Of these possible comparisons, all were significantly different.

Table 2 Expenditure Level Model Showing Median Per Pupil Expenditure and Number of School Districts

FOURTEEN EXPENDITURE LEVEL GROUPINGS		
Group Number (1)	Cost Per Pupil (2)	Number of Districts (3)
1	$1131	50
2	1198	50
3	1239	50
4	1278	50
5	1307	50
6	1336	50
7	1381	50
8	1430	50
9	1503	50
10	1584	50
11	1762	50
12	1919	50
13	2166	50
14	2580	55

TABLE 3

MEDIAN VALUES FOR EXPENDITURE LEVEL FOR EACH OF FOURTEEN EXPENDITURE LEVEL GROUPINGS, SHOWING ABSOLUTE DIFFERENCES BETWEEN EACH OF NINETY ONE POSSIBLE COMBINATIONS

GROUP NUMBER	MEDIAN EXPEN. LEVEL	ABSOLUTE VALUE DIFFERENCES BETWEEN EXPENDITURE LEVEL GROUPINGS												
		1	2	3	4	5	6	7	8	9	10	11	12	13
1	1131													
2	1198	67												
3	1239	108	41											
4	1278	147	80	39										
5	1307	176	109	68	29									
6	1336	205	138	97	58	29								
7	1381	250	183	142	103	74	45							
8	1430	299	232	191	152	123	94	49						
9	1503	372	305	264	225	196	167	122	73					
10	1584	453	386	345	306	277	248	203	154	81				
11	1762	631	564	523	484	455	426	381	332	259	178			
12	1919	788	721	680	641	612	583	538	489	416	335	157		
13	2166	1035	968	927	888	859	830	785	736	663	582	404	247	
14	2580	1449	1382	1341	1302	1273	1244	1199	1150	1077	996	818	661	414

This table should be read as follows: The absolute difference Col. (1) between the median expenditure level for Group 1 and Group 2 is $67 per pupil ($1198 - $1131). The absolute difference Col. (2) between the median expenditure level for Group 2 and Group 3 is $41 per pupil ($1239 - $1198).

As is indicated in Figure 4.5, the flow of expenditure level into instructional services is most pronounced. The relationshp is a high, positive, and significant one. Moreover, this condition has existed for over hald a century, not only in New York State but also in a group of school districts throughout the United States called the Associated Public School Systems. In New York State, school districts averaging $1131 per pupil for expenditure level spent $863 per pupil for instructional services--76 percent. In the middle of the expenditure level distribution, school districts expended on average $1430 per pupil for expenditure level and $1067 per pupil for instructional services--75 percent. Comparable data for the upper end of the expenditure level distribution shows districts expending $2580 per pupil for expenditure level and $1891 for instructional services--73 percent. As per pupil expenditures increase, the percent devoted to instructional services decreases only slightly.

4.6 The Flow of Expenditures for Instructional Services into Salaries, Staff Ratios, and Instructional Materials

Expenditures for instructional services flow into teachers salaries, class size and/or staff ratios, and into instructional material and supplies. Figures 4.6 and 4.7 depict the flow of per pupil expenditures for instructional services into per pupil expenditures for textbooks and instructional materials and supplies. As per pupil expenditures for instructional services increase, so do per pupil expenditures for textbooks, but in a zig-zag fashion.

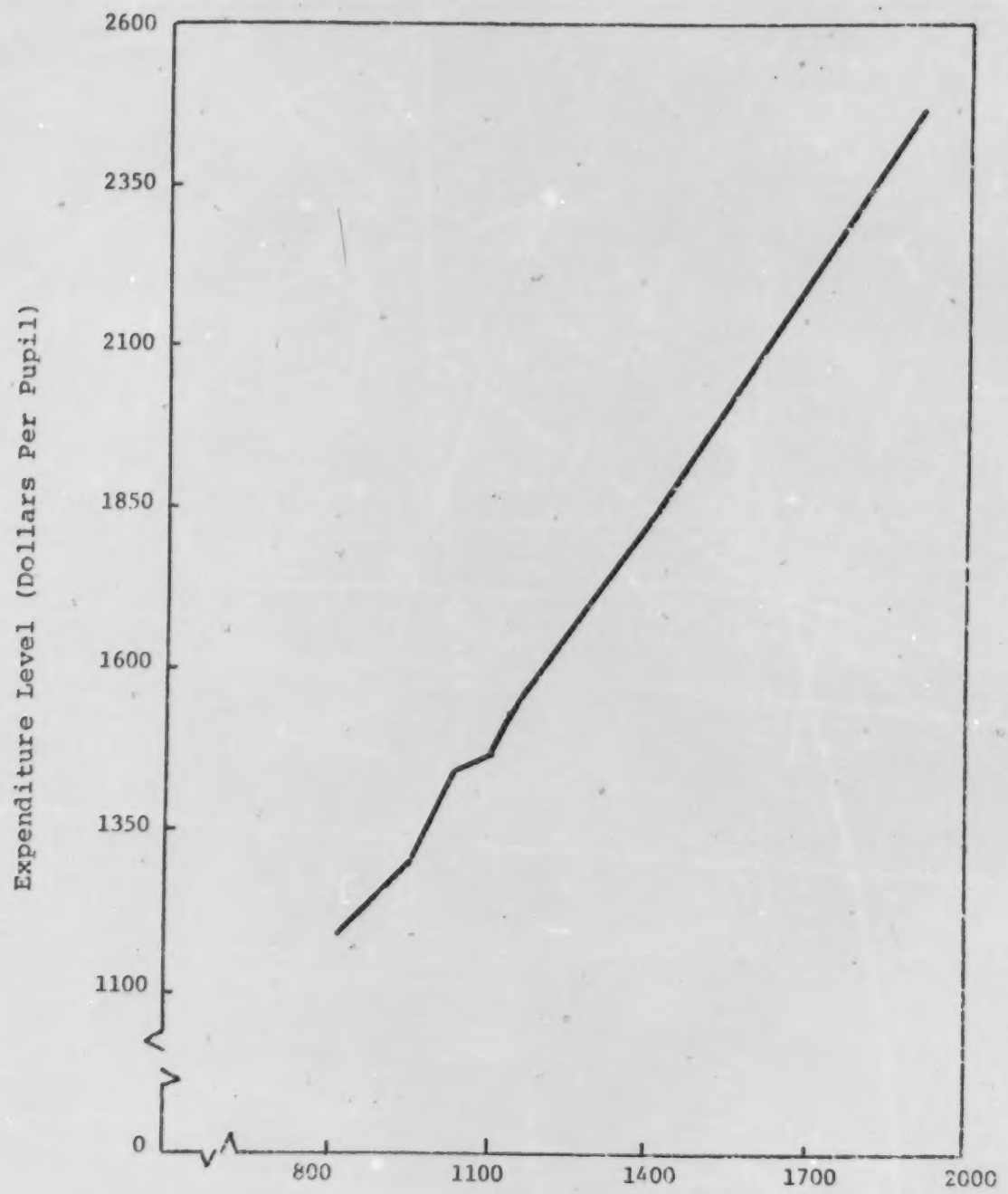
2600
2350
2100
1850
1600
1350
1100
0
800
1100
1400
1700
2000
Expenditure Level (Dollars Per Pupil)
Total Expenditures for Instructional Services
Per Pupil

FIGURE 4.5

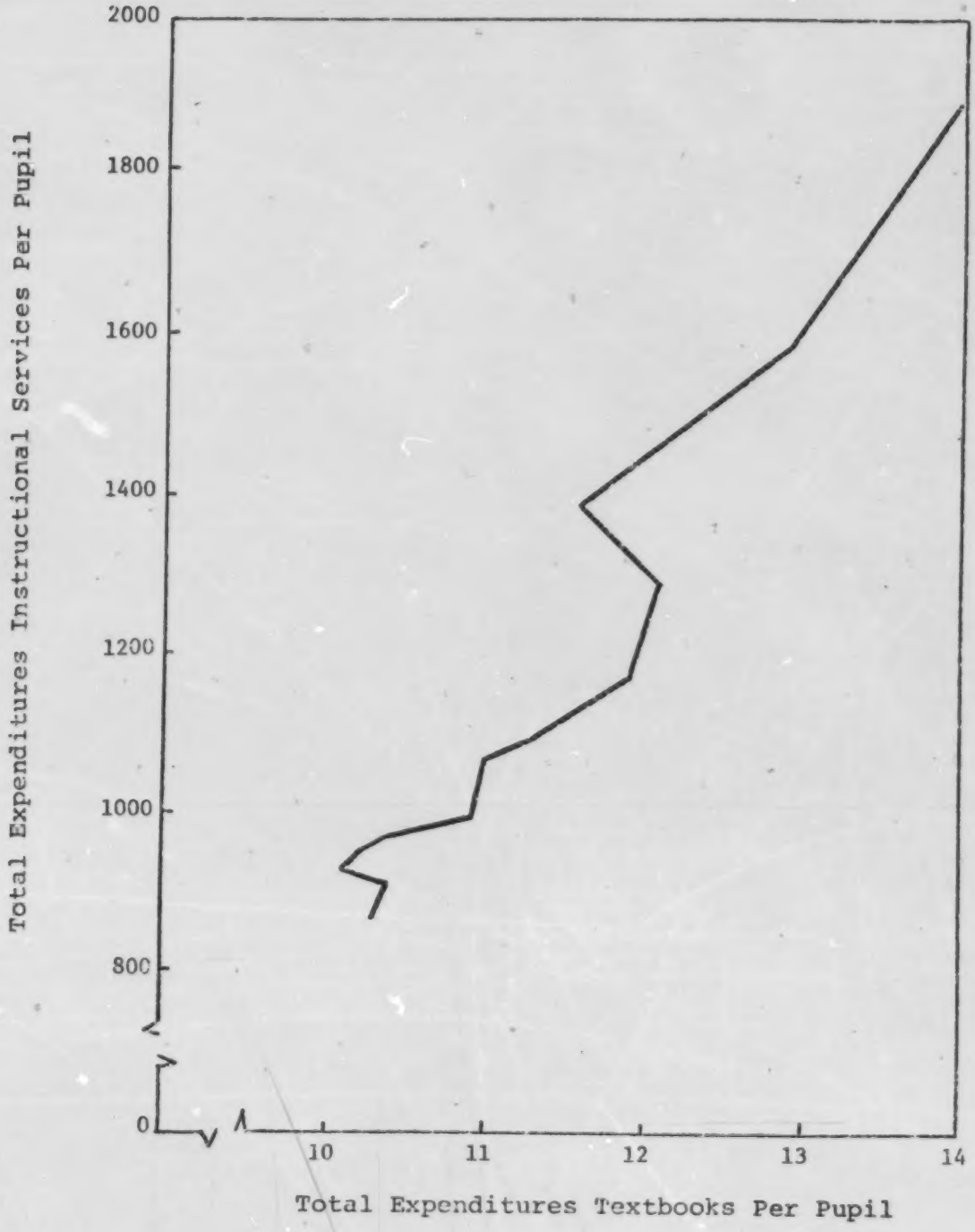
Total Expenditures Instructional Services Per Pupil
2000
1800
1600
1400
1200
1000
800
0
10
11
12
13
14
Total Expenditures Textbooks Per Pupil

FIGURE 4.6

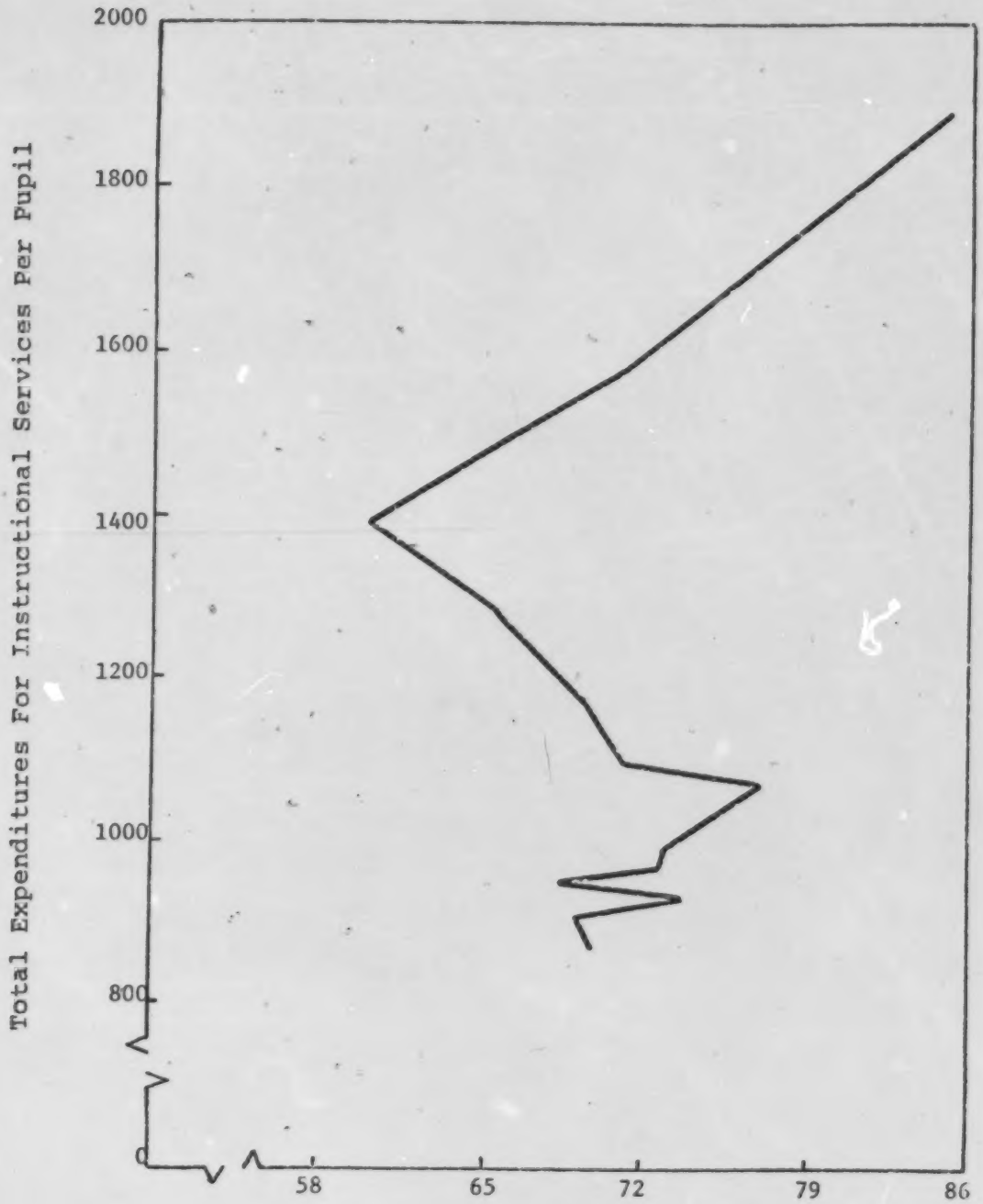
2000
1800
1600
1400
1200
1000
800
0
58
65
72
79
86
Total Expenditures For Instructional Services Per Pupil
Total Expenditures For Instructional
Materials and Supplies Per Pupil

FIGURE 4.7

Of the 91 statistical group comparisons, 20 were significantly different. The flow into materials and supplies is more convoluted than that for textbooks and of the 91 group comparisons only 4 were statistically significant. Per pupil expenditures for textbooks varied from $10 to $14 per pupil on average as per pupil expenditures for instructional services increased from $863 to $1891. Over the same range for expenditures for instructional services, per pupil expenditures for instructional materials and supplies varied from $71 to $84 per pupil.

Not only do expenditures for instructional services flow into textbooks, and instructional materials, but also into salaries and staff adequacy. As expenditure levels increase, not only do professional salaries increase, but so do professional staffing ratios. This is evident from Figures 4.8 and 4.9 for salaries, and Figures 4.10 to 4.16 inclusive for staffing ratios.

For New York State, despite the prevalence of single salary schedules, the flow of expenditures from instructional services into salaries has resulted in median salaries being higher for secondary compared to elementary teachers. This is true along the entire distribution for instructional services expenditures. At the low end, salary differences between secondary and elementary staff average about $1100 and at the high end about $1500.

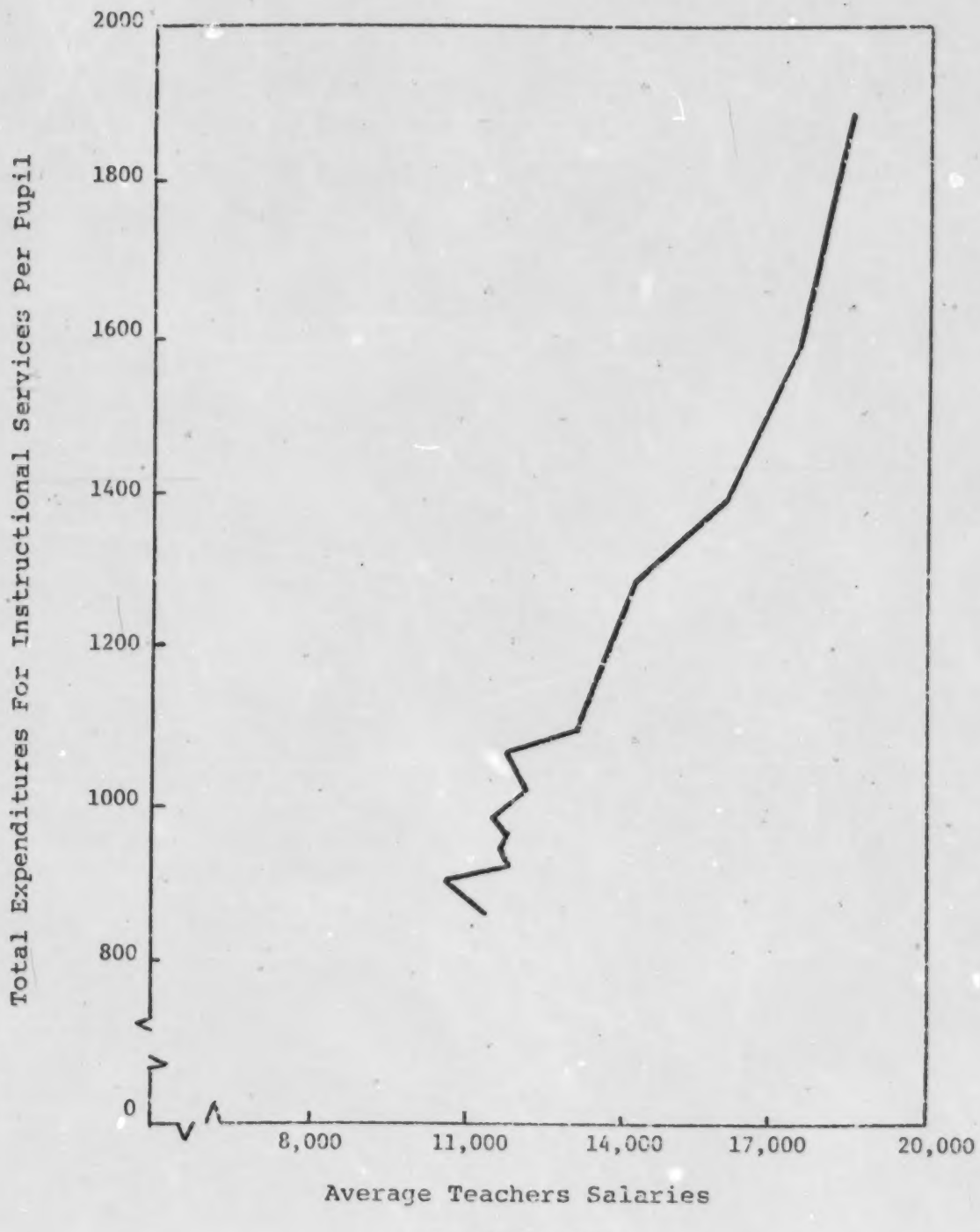
Total Expenditures For Instructional Services Per Pupil
2000
1800
1600
1400
1200
1000
800
0
8,000
11,000
14,000
17,000
20,000
Average Teachers Salaries
Grades 7-12

FIGURE 4.8

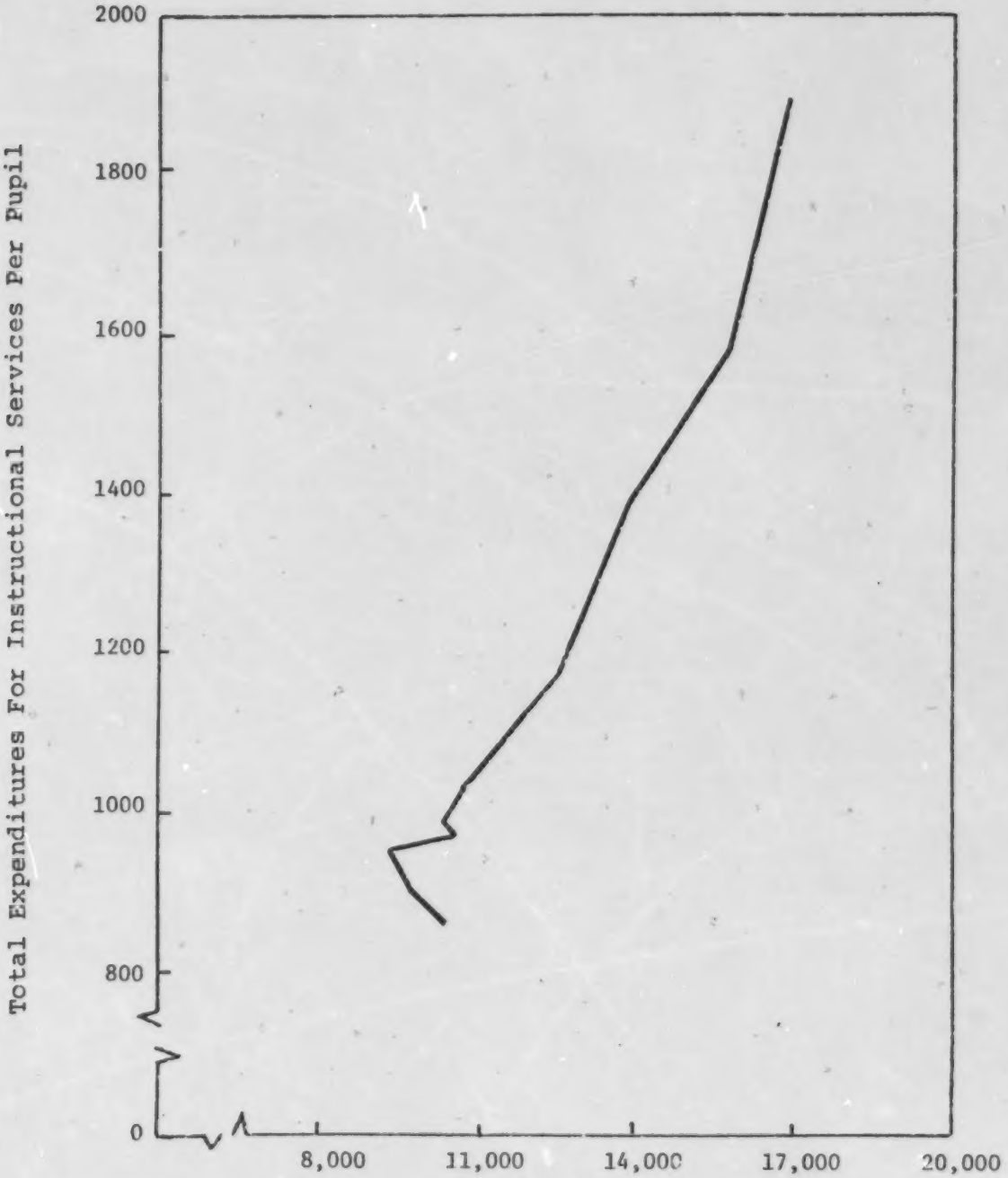
Total Expenditures For Instructional Services Per Pupil
2000
1800
1600
1400
1200
1000
800
0
8,000
11,000
14,000
17,000
20,000
Average Teachers Salaries
Grades K-6

FIGURE 4.9

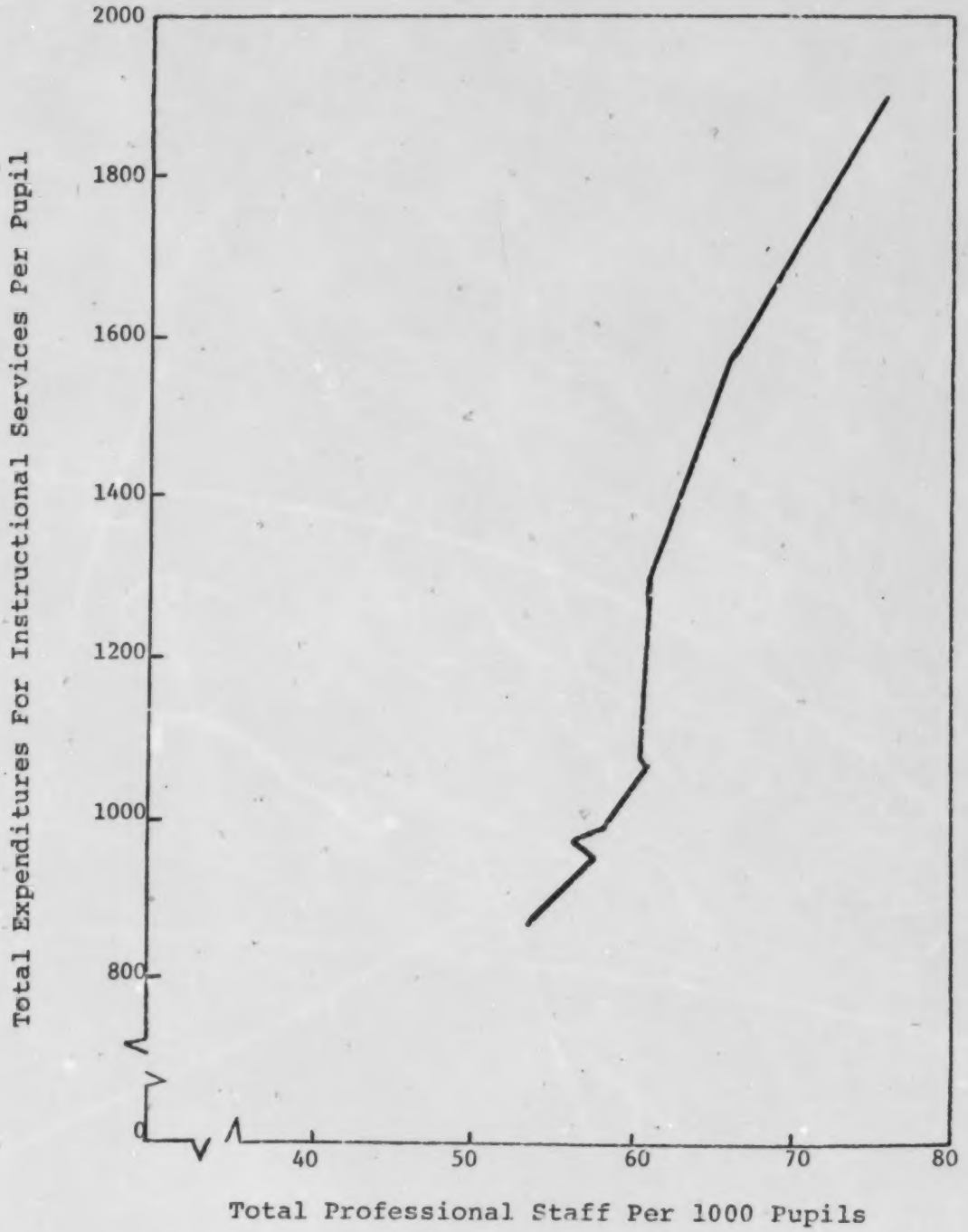
Total Expenditures For Instructional Services Per Pupil
2000
1800
1600
1400
1200
1000
800
0
40
50
60
70
80
Total Professional Staff Per 1000 Pupils

FIGURE 4.10

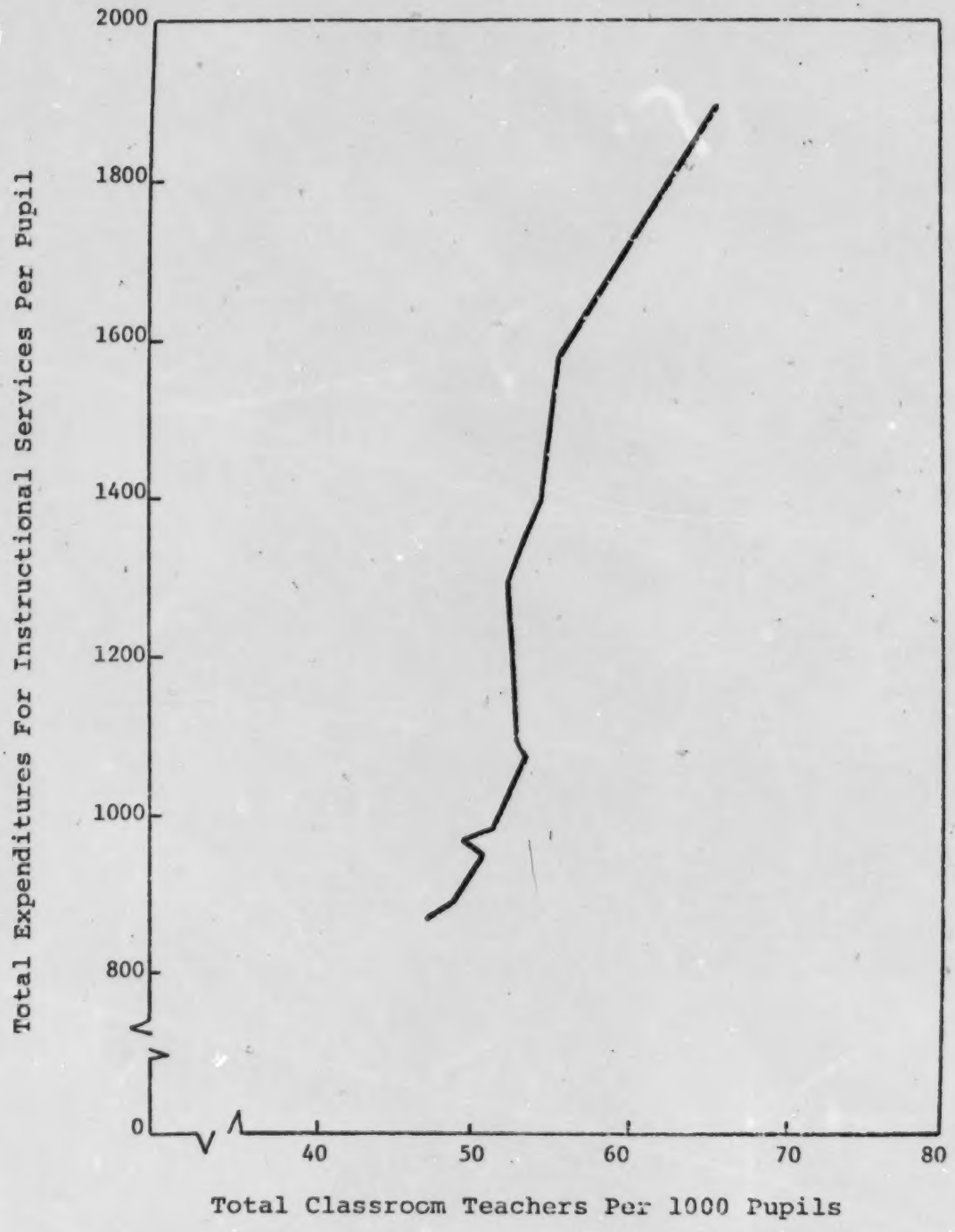
Total Expenditures For Instructional Services Per Pupil
2000
1800
1600
1400
1200
1000
800
0
40
50
60
70
80
Total Classroom Teachers Per 1000 Pupils

FIGURE 4.11

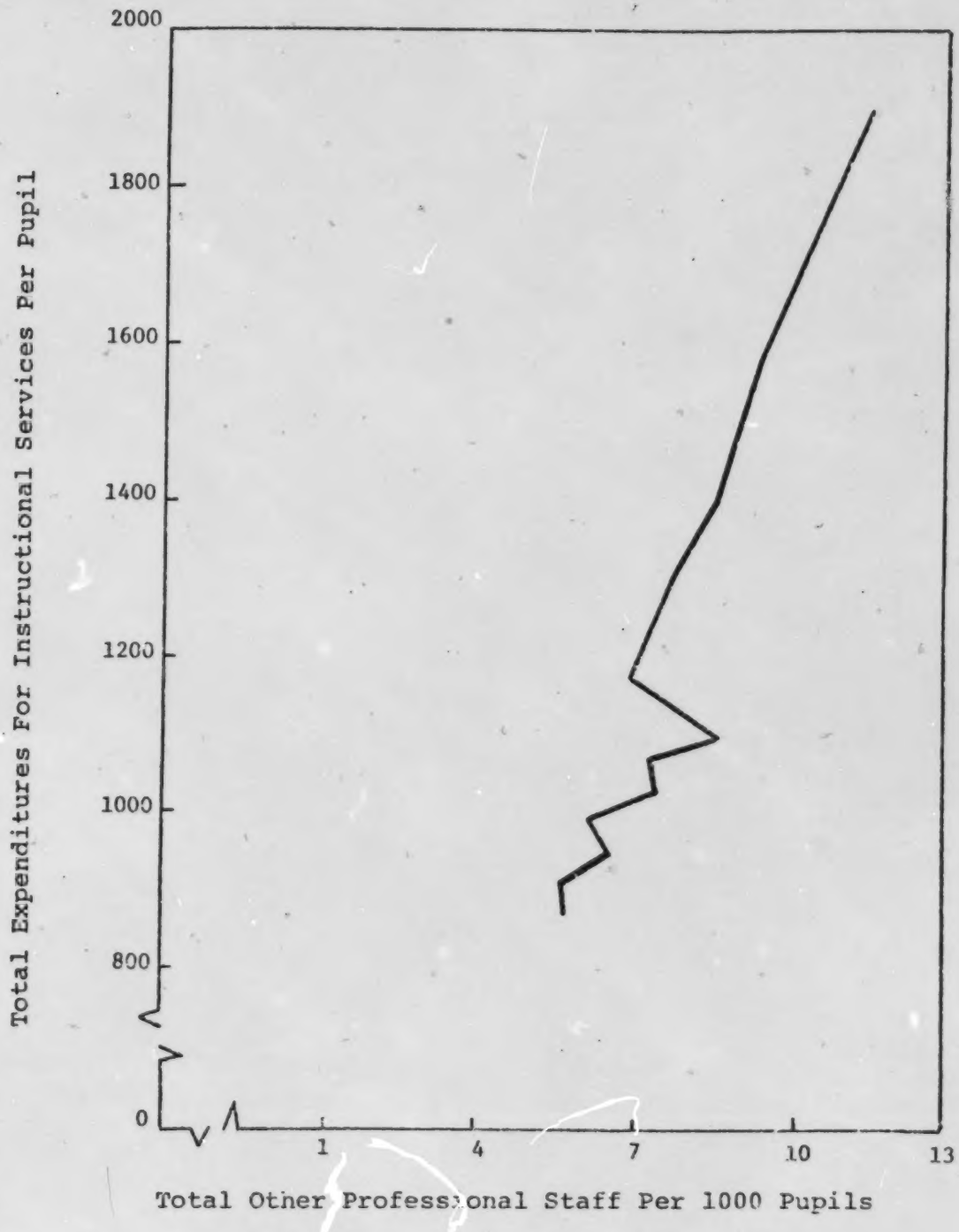
Total Expenditures For Instructional Services Per Pupil
2000
1800
1600
1400
1200
1000
800
0
1
4
7
10
13
Total Other Professional Staff Per 1000 Pupils

FIGURE 4.12

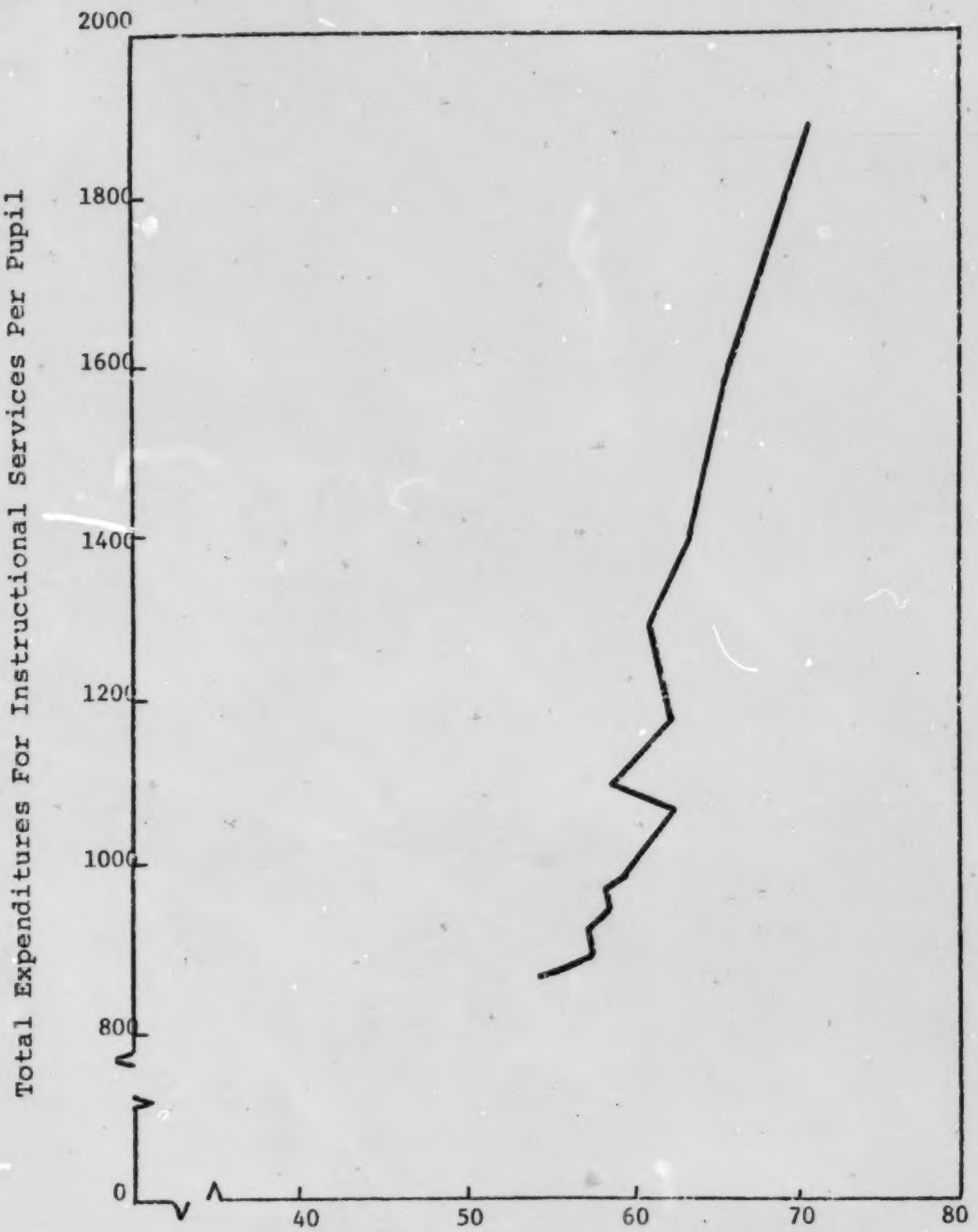
Total Expenditures For Instructional Services Per Pupil
2000
1800
1600
1400
1200
1000
800
0
40
50
60
70
80
Classroom Teachers Per 1000 Secondary Pupils
(Grades 7-12)

FIGURE 4.13

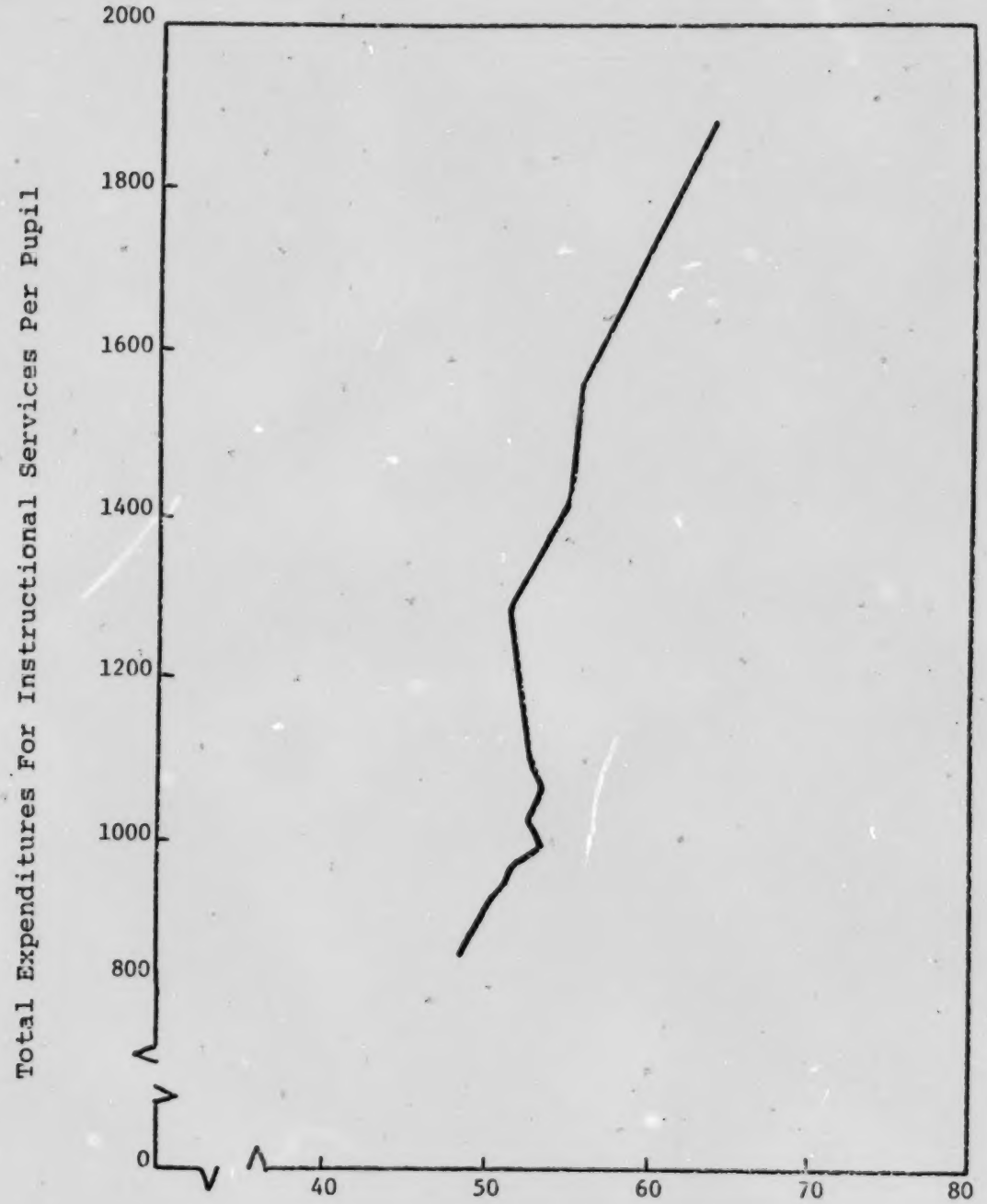
Total Expenditures For Instructional Services Per Pupil
2000
1800
1600
1400
1200
1000
800
0
40
50
60
70
80
Classroom Teachers Per 1000 Elementary Pupils
(Grades K-6)

FIGURE 4.14

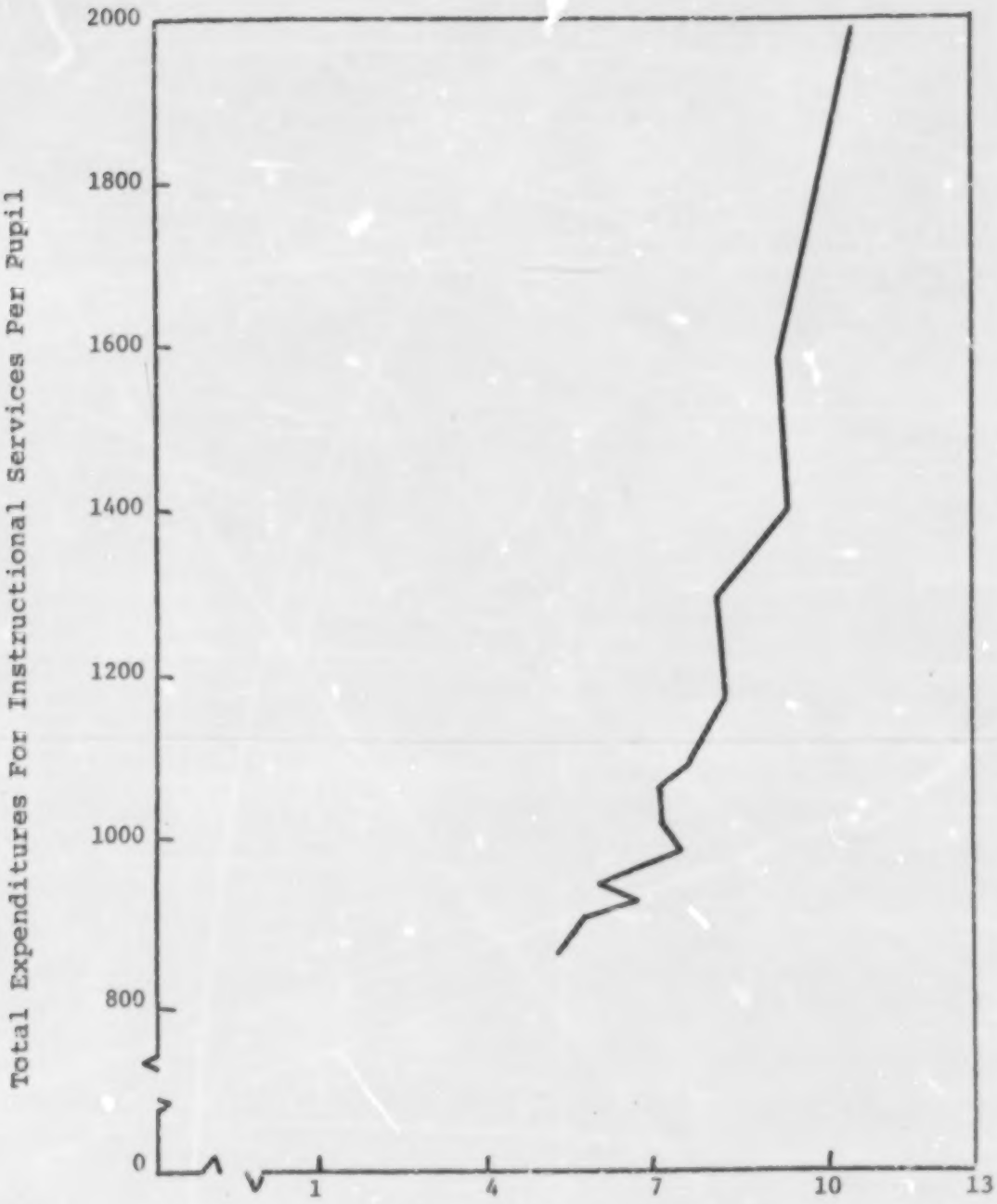
Total Expenditures For Instructional Services Per Pupil
2000
1800
1600
1400
1200
1000
800
0
1
4
7
10
13
Other Professional Staff Per 1000 Secondary Pupils (Grades 7-12)

FIGURE 4.15

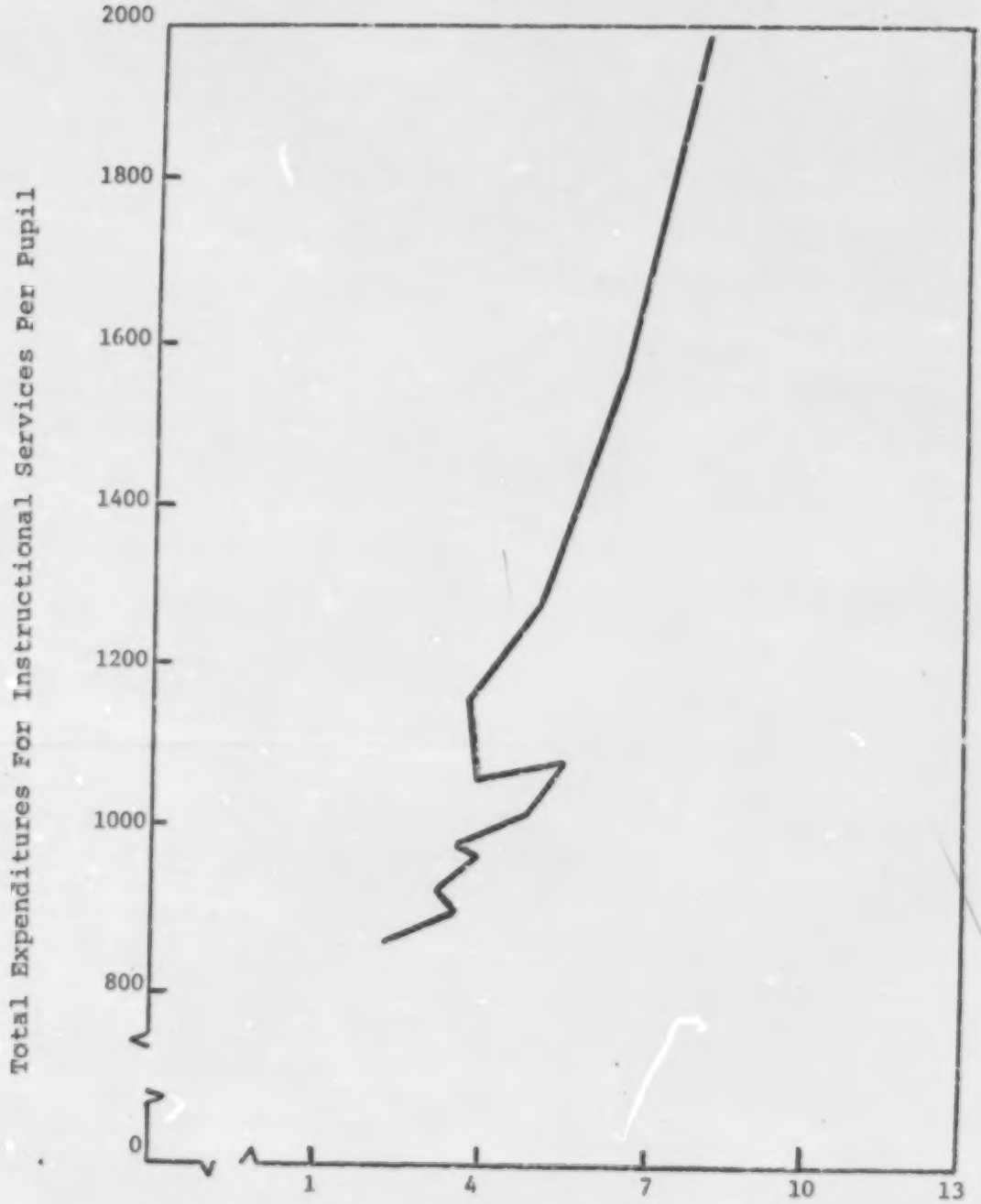
Total Expenditures For Instructional Services Per Pupil
2000
1800
1600
1400
1200
1000
800
0
1
4
7
10
13
Other Professional Staff Per 1000 Elementary
Pupils (Grades K-6)

FIGURE 4.16

As instructional expenditures increased, total professional staff ratios (staff per 1,000 pupils) increased from 53 professionals per 1,000 pupils to 76; classroom teacher ratios increased from 47 per 1,000 pupils to 65; and other professional staff (nonclassroom teachers) from 6 to 11 per 1,000 pupils. Not only did the flow of instructional expenditures produce higher secondary than elementary salaries, but also high staff ratios. For example, as per pupil expenditures for instruction increased, elementary classroom teacher ratios went from 49 to 64 but secondary ratios went from 54 to 71. Similar staff ratio differences are evident for nonclassroom professionals. The flow of increased per pupil expenditures for instructional services from $863 to $1891 per pupil resulted in elementary nonclassroom teacher professional staff ratios going from 2 to 8 per 1,000 pupils compared to secondary ratio going from 5 to 11 per 1,000 pupils.

4.7 The Flow of Expenditures for Instructional Services into Staff Characteristics--Education, Training, and Experience

As expenditure levels increase, the percentage of teachers having only a bachelor's degree decreases, as does the percentage of teachers with bachelor's plus 30 semester hours, but ther percentage of teachers with masters degrees increases. Specifically, districts with expenditures for instructional services of $863 have on average teaching staffs composed of 49 percent with bachelor degrees, 22 percent with bachelor degrees plus 30 semester hours, and 24 percent with masters degrees. As per pupil expenditures for instructional services increase, the percentage of teachers with only bachelor degrees declined as did

that for teachers with only bachelor degrees plus 30 semester hours, but the percentage of teachers with masters degrees almost doubled. For example, at $1891 per pupil for instructional services, districts had on average teaching staffs composed of 16 percent bachelor degrees, 14 percent bachelors plus 30 semester hours, and 40 percent master degrees. Figures 4.17, 4.18, 4.19, and 4.20 show the flow of instructional expenditures into such staff characteristics as education, training, and experience.

4.8 The Flow of Expenditures from Instructional Services into Pupil Performance Measures

In this study, we have not assessed the flow of expenditures into all aspects of school quality, nor even that part promulgated by the New York State Board of Regents. We have looked at only a small part of the cognitive domain and nothing at all of the affective domain.

As expenditures for instructional services increase, median scores (grade equivalents) in reading and mathematics made by pupils in the third grade generally increase, as do those by sixth graders and by ninth graders. The relationship is not as pronounced for ninth as for sixth graders, nor as pronounced for sixth as for third graders. Figures 4.21 to 4.26 inclusive portray the flow of instructional expenditures into the pupil performance output measures of reading and mathematics. Many other forces are at work here in addition to those of expenditures such as motivation, innate cognitive ability, and socioeconomic forces. Clearly, the effects of intelligence and its surrogates affect pupil performance results.

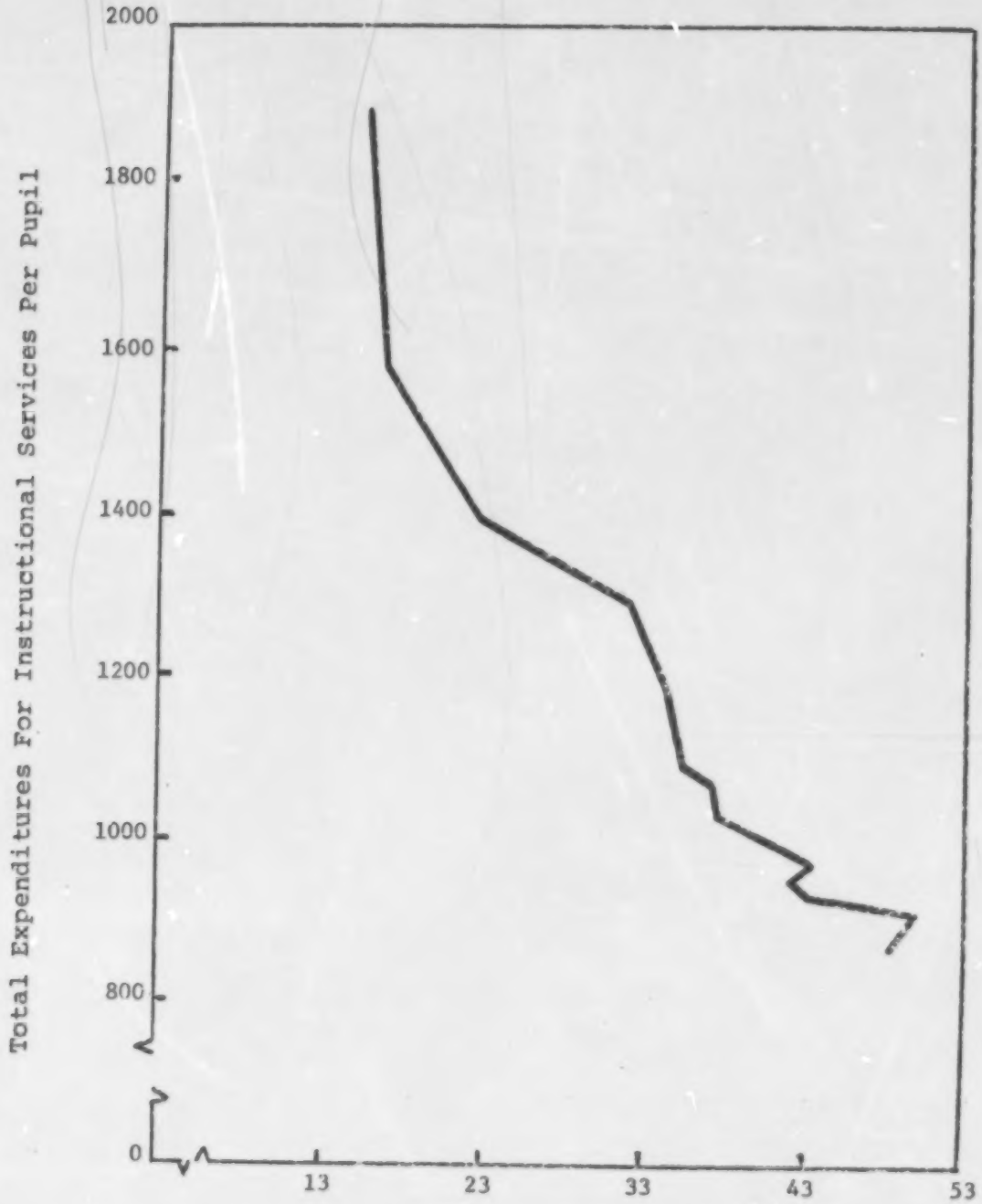
Total Expenditures For Instructional Services Per Pupil
2000
1800
1600
1400
1200
1000
800
0
13
23
33
43
53
Percent of Teachers Holding Bachelors Degree Only

FIGURE 4.17

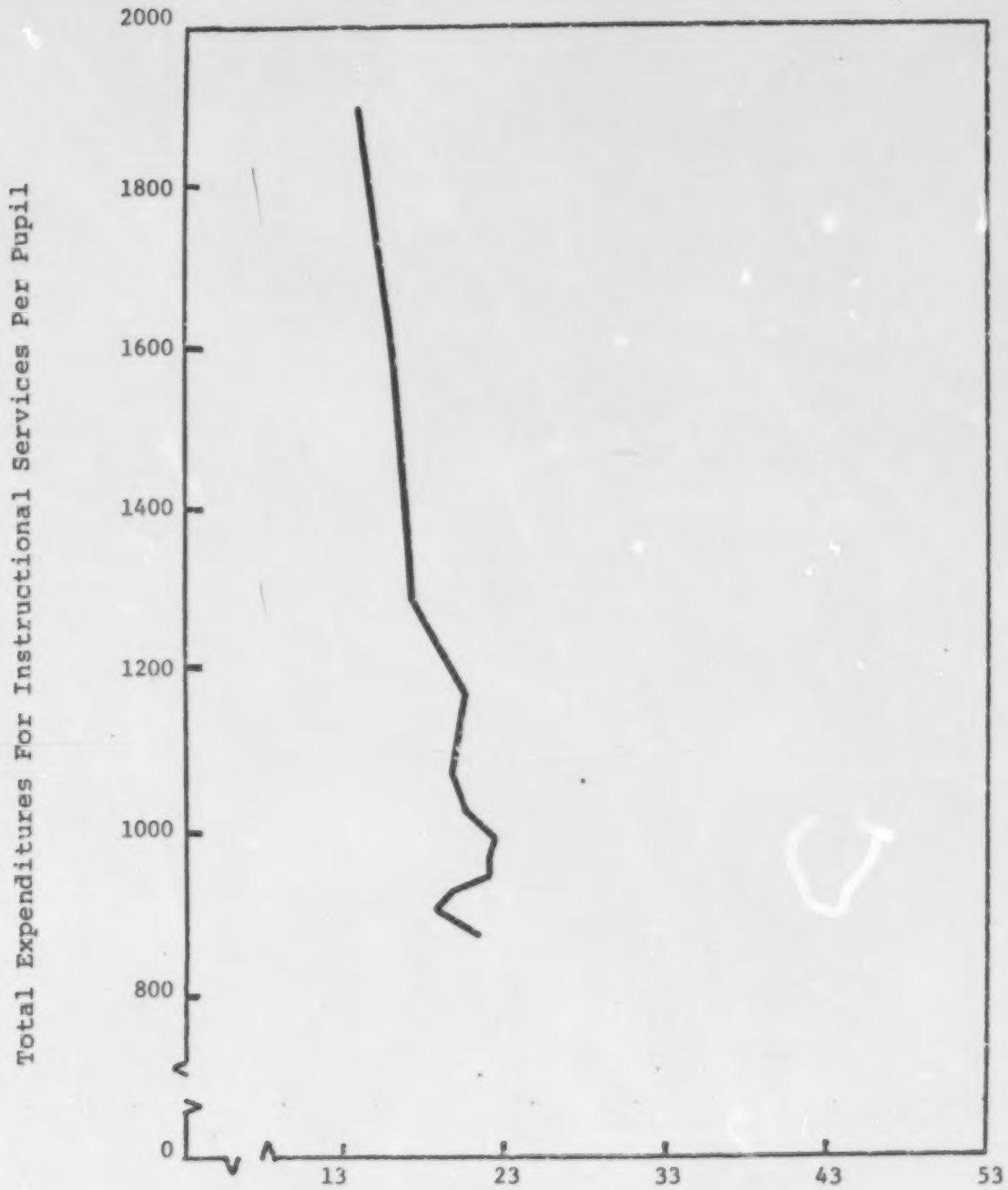
Total Expenditures For Instructional Services Per Pupil
2000
1800
1600
1400
1200
1000
800
0
13
23
33
43
53
Percent of Teachers Holding Bachelors Degree
Plus Thirty Hours of Graduate Credit

FIGURE 4.18

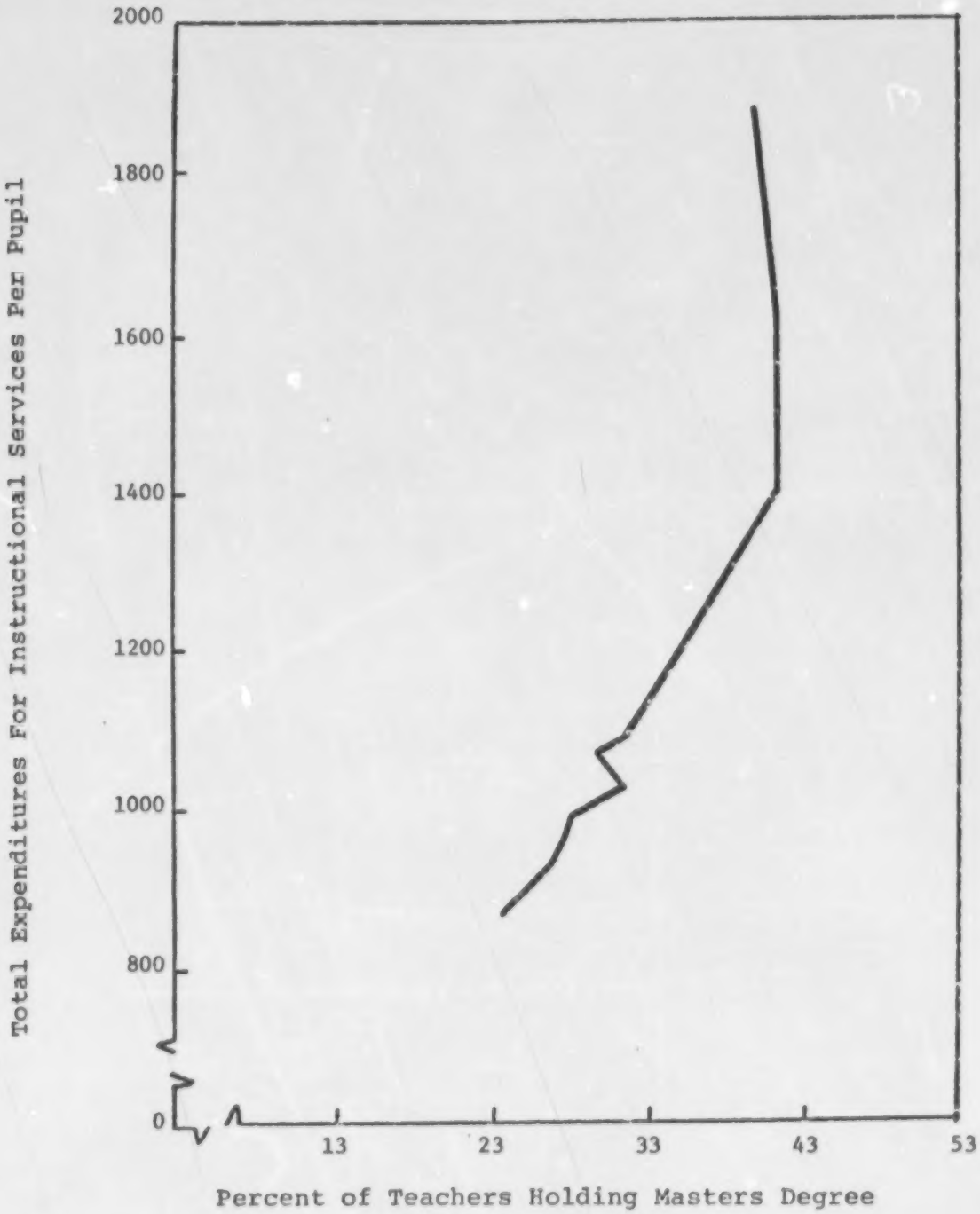
Total Expenditures For Instructional Services Per Pupil
2000
1800
1600
1400
1200
1000
800
0
13
23
33
43
53
Percent of Teachers Holding Masters Degree

FIGURE 4.19

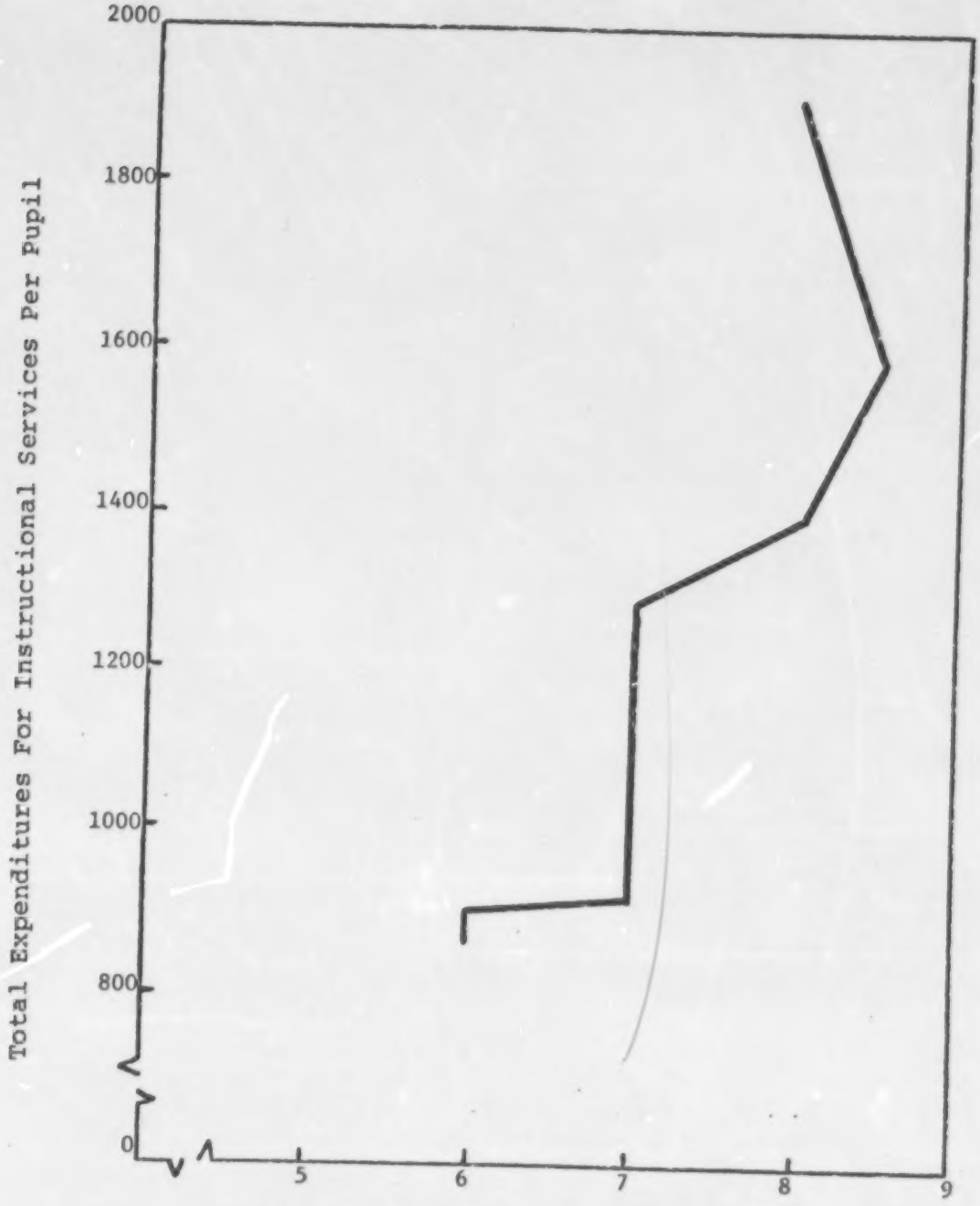
Total Expenditures For Instructional Services Per Pupil
2000
1800
1600
1400
1200
1000
800
0
5
6
7
8
9
Median Number of Years Teaching In District

FIGURE 4.20

Children in the third grade in low expenditure districts (those spending about $863 per pupil for instructional services) scored on average 3.2 grade equivalents in mathematics and 3.5 in reading compared to children in third grade in high expenditure districts ($1891 per pupil) who scored on average 3.9 in mathematics and 3.7 in reading. As is evidenced by the graphs depicting the flow of expenditures into pupil performance, the results at grades 6 and 9 indicate pictures of confusion.

Cognitive results can be expressed not only by grade equivalent scores but also by the percentage of pupils who scored below an arbitrary level defined as "the minimum competency level." Figures 4.27 to 4.32 inclusive depict the relationships between expenditures for instructional services and minimum competency levels. As expenditures for instructional services increase, the percentages of pupils scoring below minimum competency levels in mathematics and reading decrease.

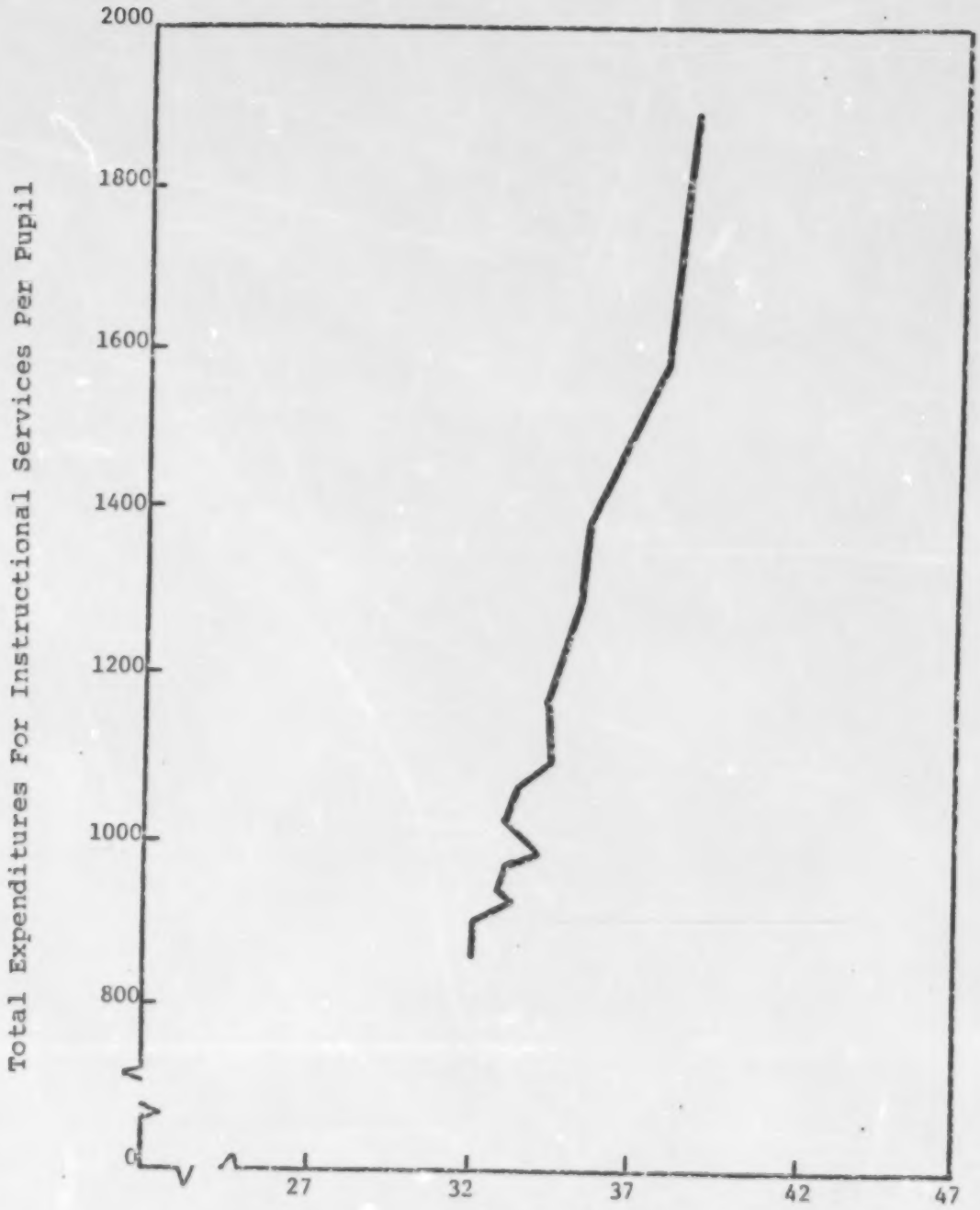
Total Expenditures For Instructional Services Per Pupil
2000
1800
1600
1400
1200
1000
800
0
27
32
37
42
47
Median Score on Pupil Evaluation Performance (PEP)
Mathematics Test - Grade 3

FIGURE 4.21

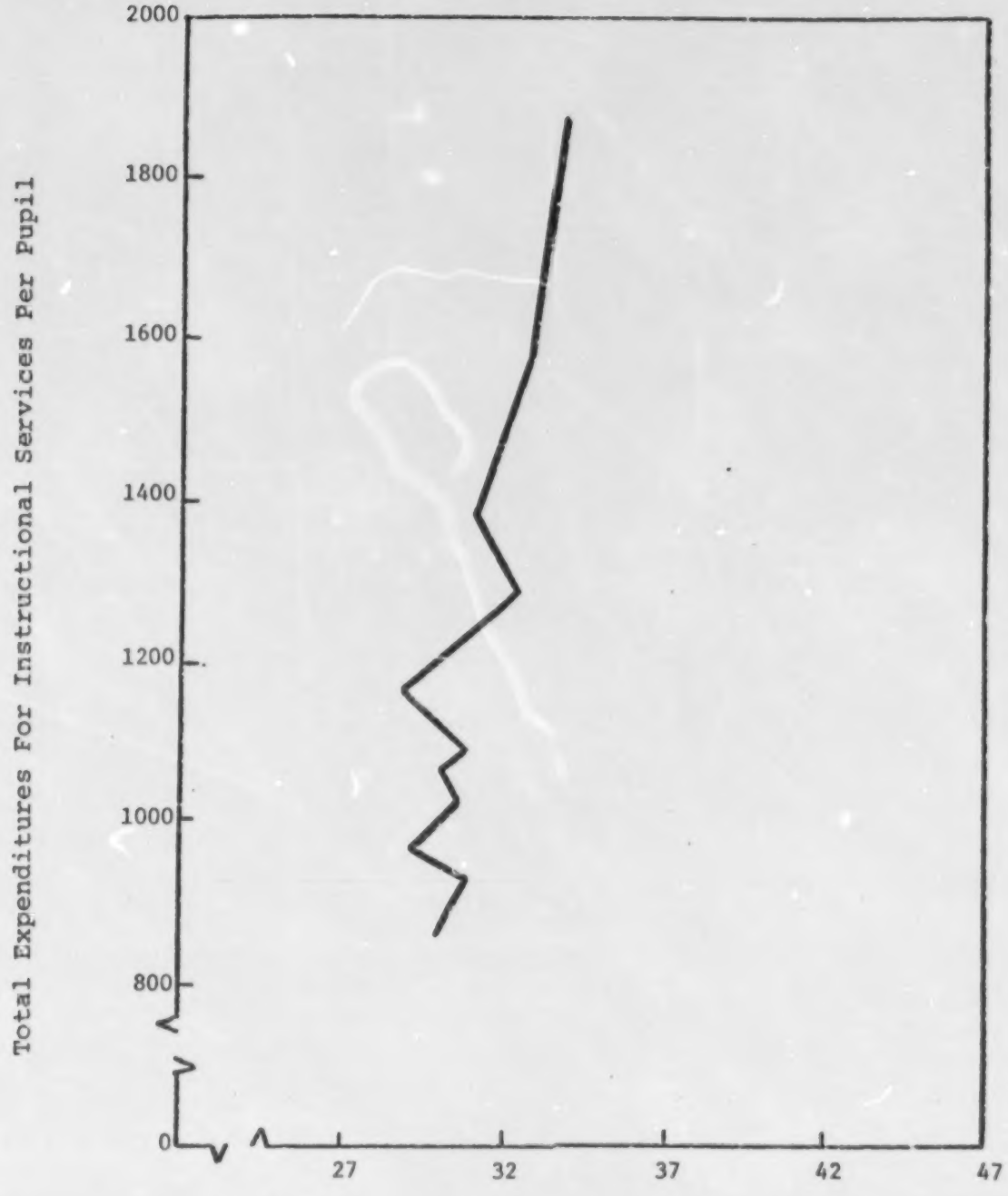
Total Expenditures For Instructional Services Per Pupil
2000
1800
1600
1400
1200
1000
800
0
27
32
37
42
47
Median Score on Pupil Evaluation Performance (PEP)
Mathematics Test - Grade 6

FIGURE 4.22

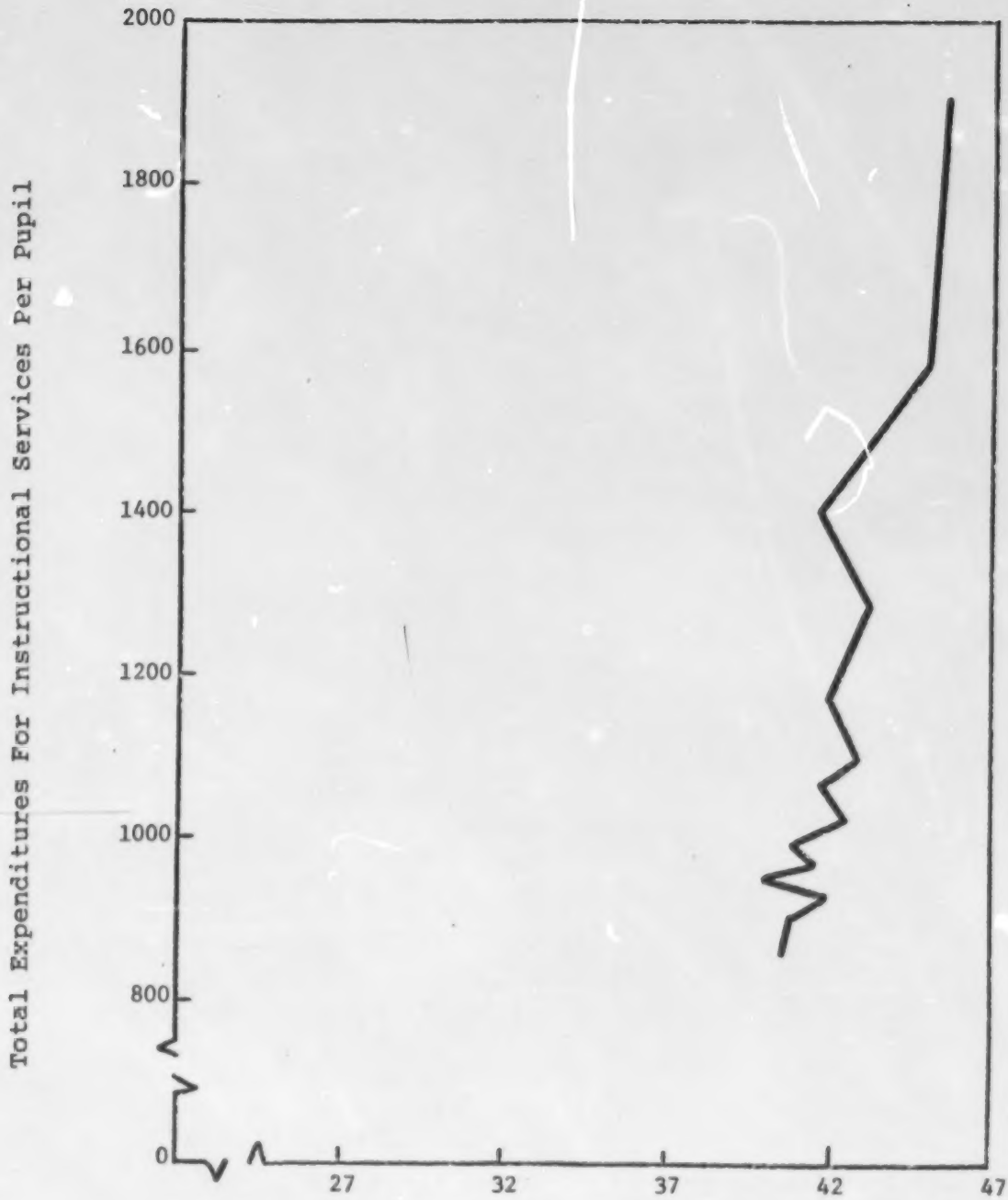
Total Expenditures For Instructional Services Per Pupil
2000
1800
1600
1400
1200
1000
800
0
27
32
37
42
47
Median Score on Pupil Evaluation Performance (PEP)
Mathematics Test - Grade 9

FIGURE 4.23

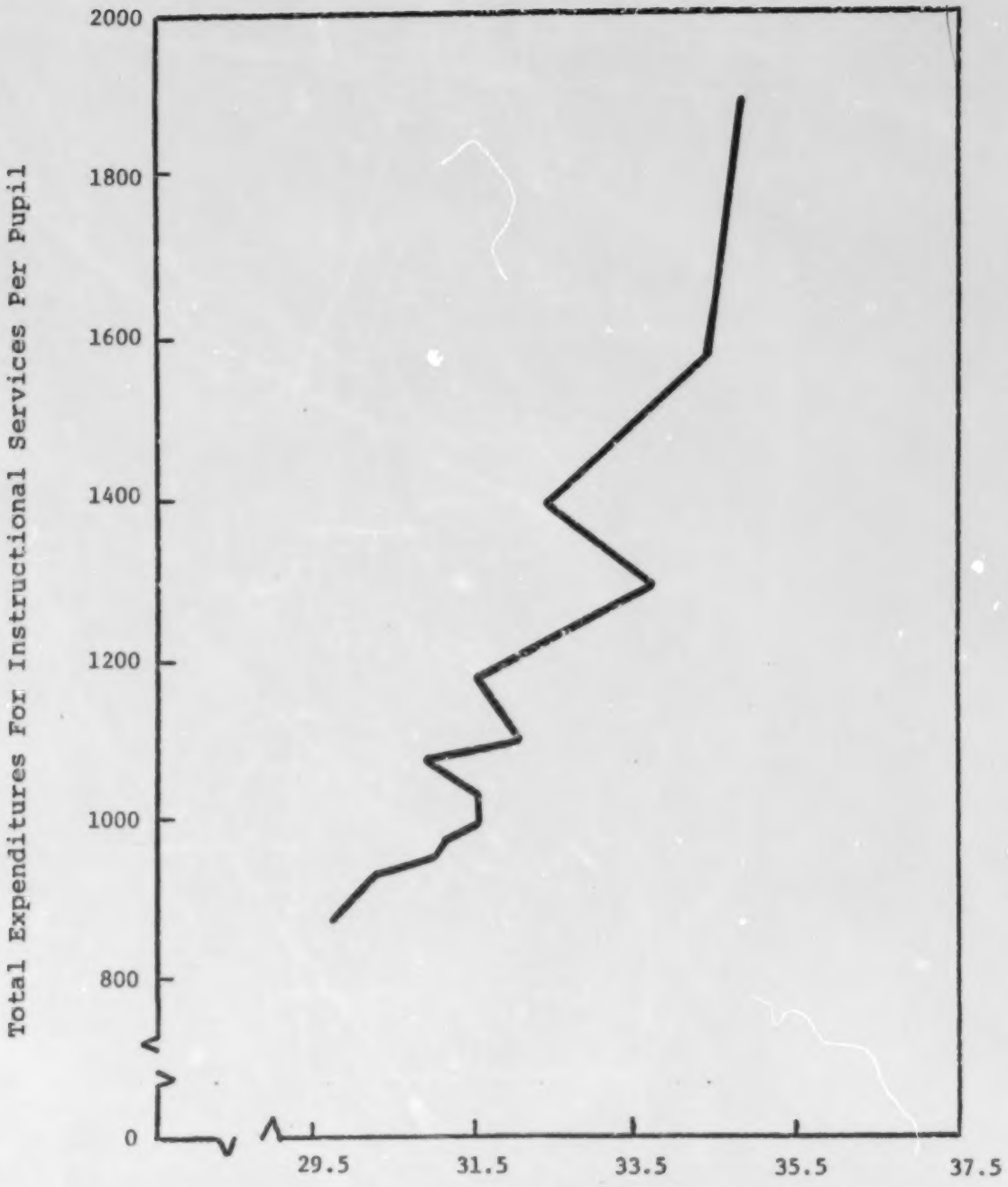
2000
1800
1600
1400
1200
1000
800
0
Total Expenditures For Instructional Services Per Pupil
29.5
31.5
33.5
35.5
37.5
Median Score on Pupil Evaluation Performance (PEP)
Reading Test - Grade 3

FIGURE 4.24

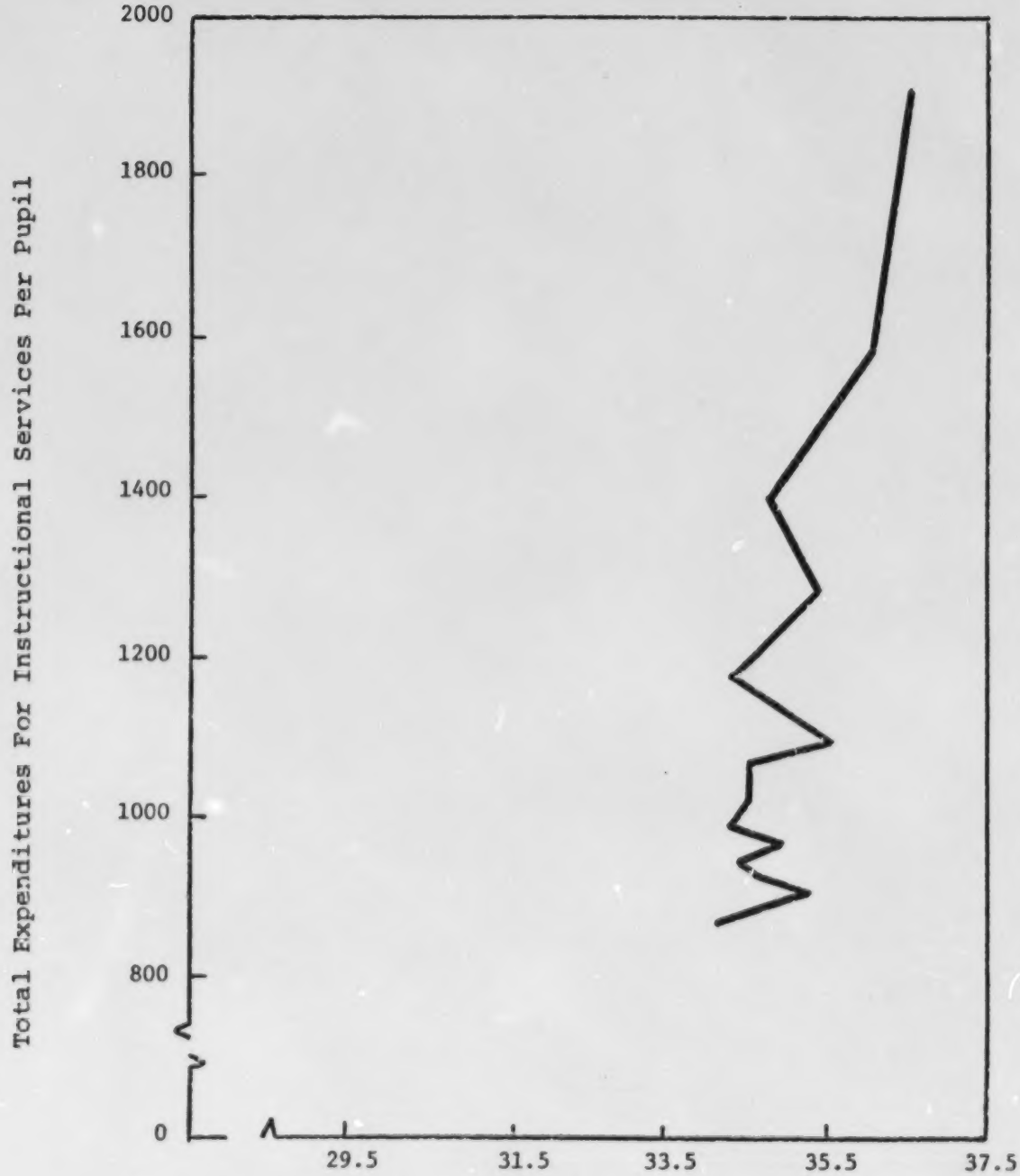
Total Expenditures For Instructional Services Per Pupil
2000
1800
1600
1400
1200
1000
800
0
29.5
31.5
33.5
35.5
37.5
Median Score on Pupil Evaluation Performance (PEP)
Reading Test - Grade 6

FIGURE 4.25

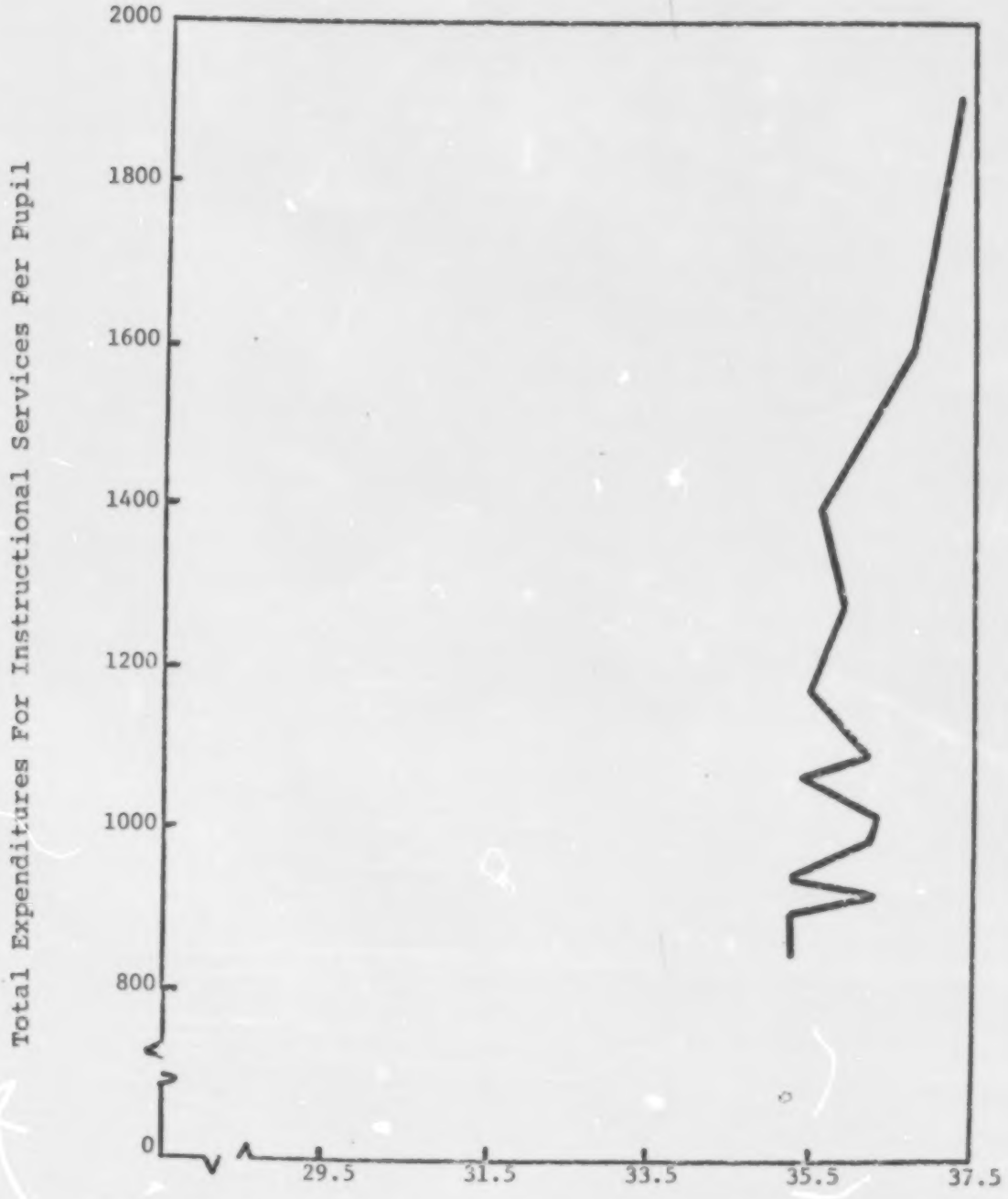
Total Expenditures For Instructional Services Per Pupil
2000
1800
1600
1400
1200
1000
800
0
29.5
31.5
33.5
35.5
37.5
Median Score on Pupil Evaluation Performance (PEP)
Reading Test - Grade 9

FIGURE 4.26

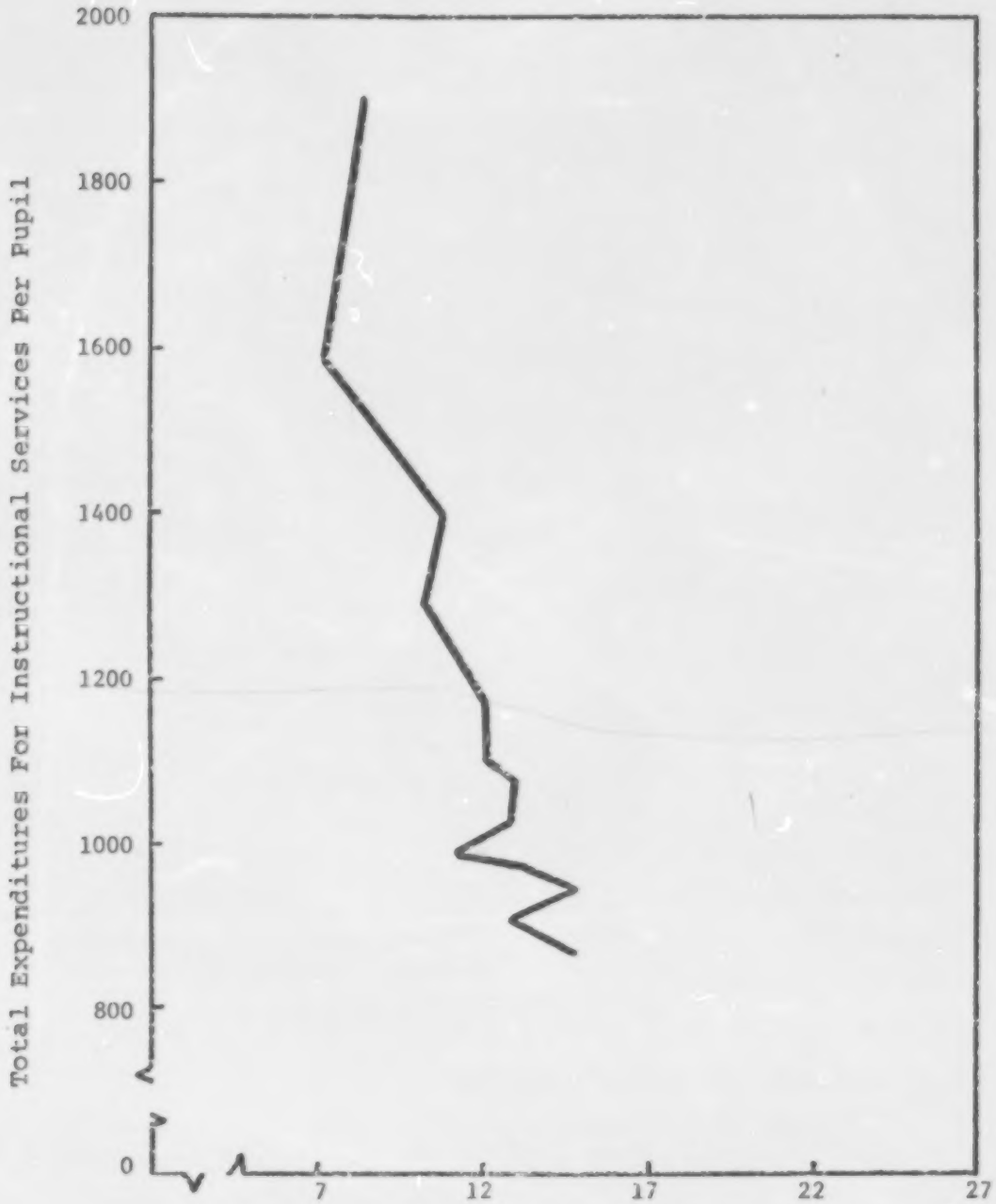
Total Expenditures For Instructional Services Per Pupil
2000
1800
1600
1400
1200
1000
800
0
7
12
17
22
27
Percent of Pupils Scoring Below Minimum Competency
On Pupil Evaluation Performance (PEP)
Mathematics Test - Grade 3

FIGURE '4.27

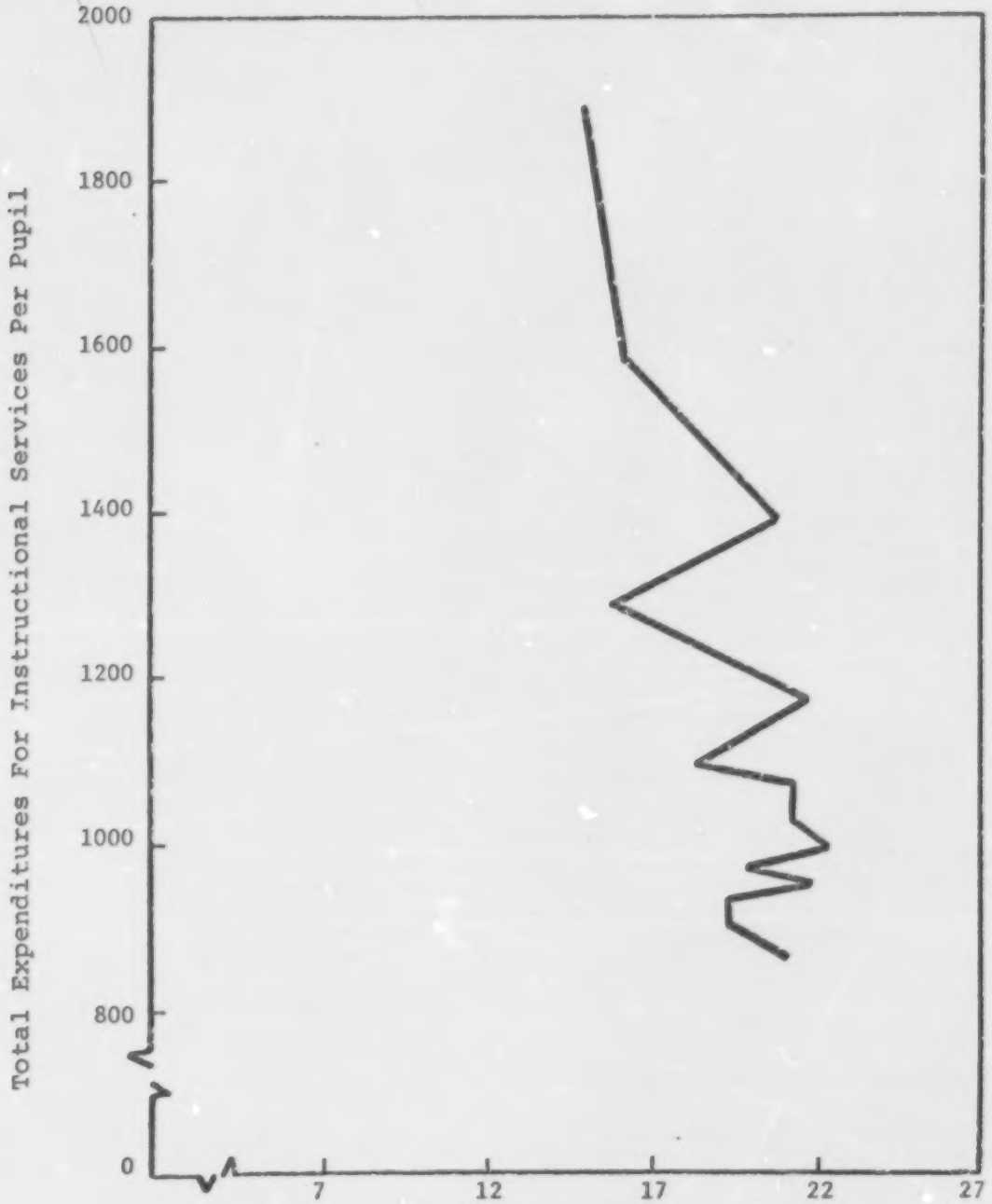
Total Expenditures For Instructional Services Per Pupil
2000
1800
1600
1400
1200
1000
800
0
7
12
17
22
27
Percent of Pupils Scoring Below Minimum Competency
On Pupil Evaluation Performance (PEP)
Mathematics Test - Grade 6

FIGURE 4.28

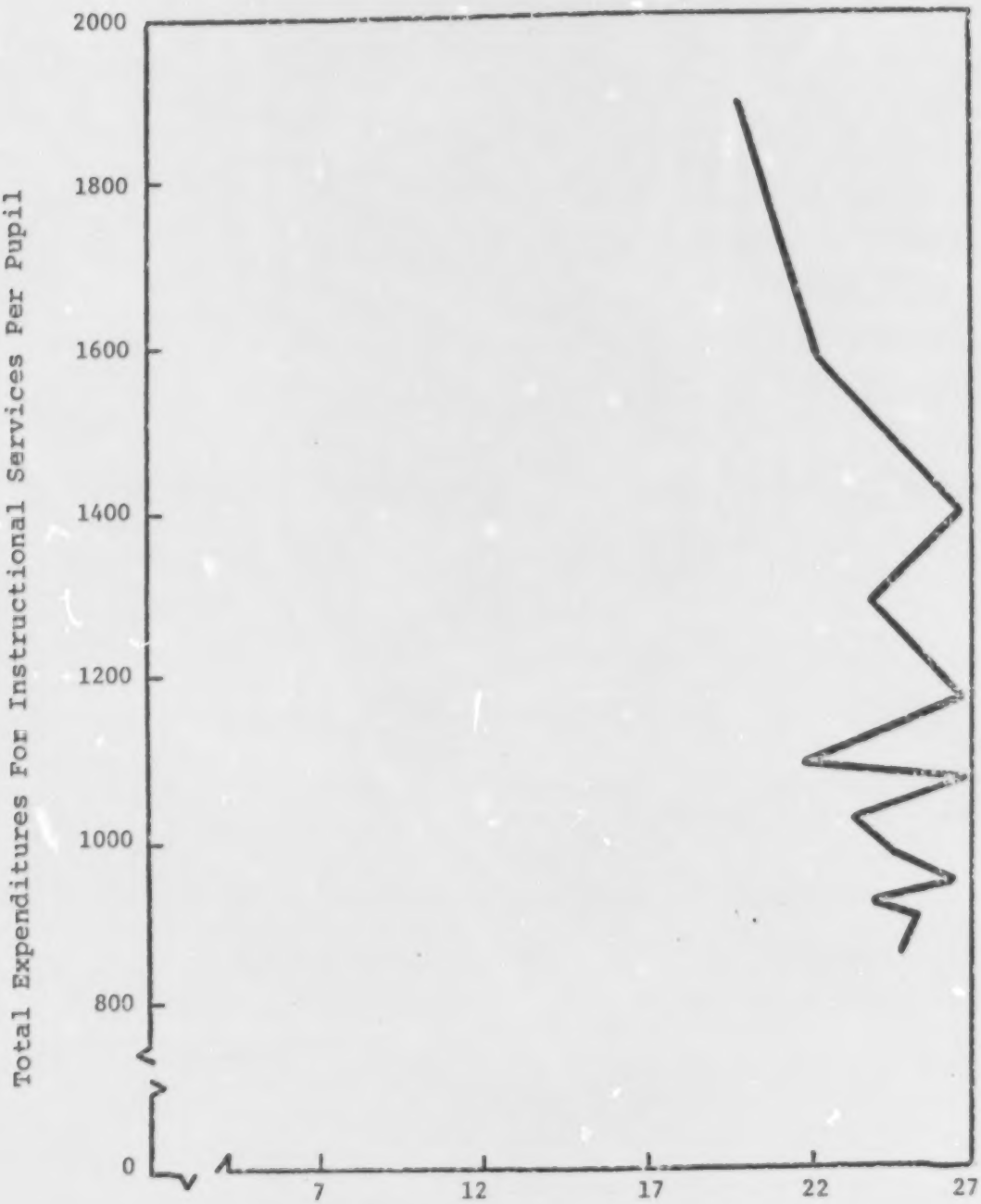
Total Expenditures For Instructional Services Per Pupil
2000
1800
1600
1400
1200
1000
800
0
7
12
17
22
27
Percent of Pupils Scoring Below Minimum Competency
On Pupil Evaluation Performance (PEP)
Mathematics Test - Grade 9

FIGURE 4.29

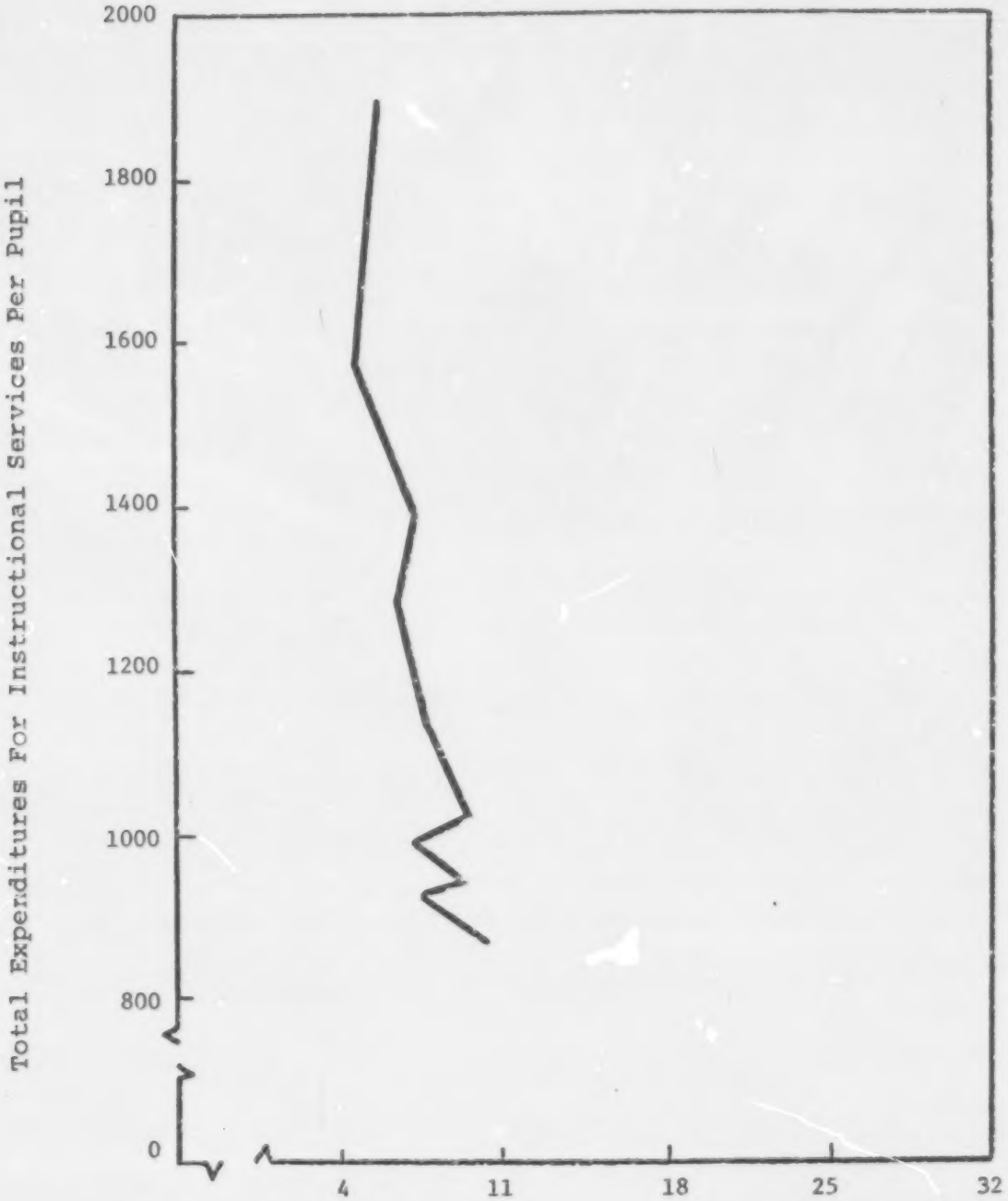
Total Expenditures For Instructional Services Per Pupil
2000
1800
1600
1400
1200
1000
800
0
4
11
18
25
32
Percent of Pupils Scoring Below Minimum Competency
On Pupil Evaluation Performance (PEP)
Reading Test - Grade 3

FIGURE 4.30

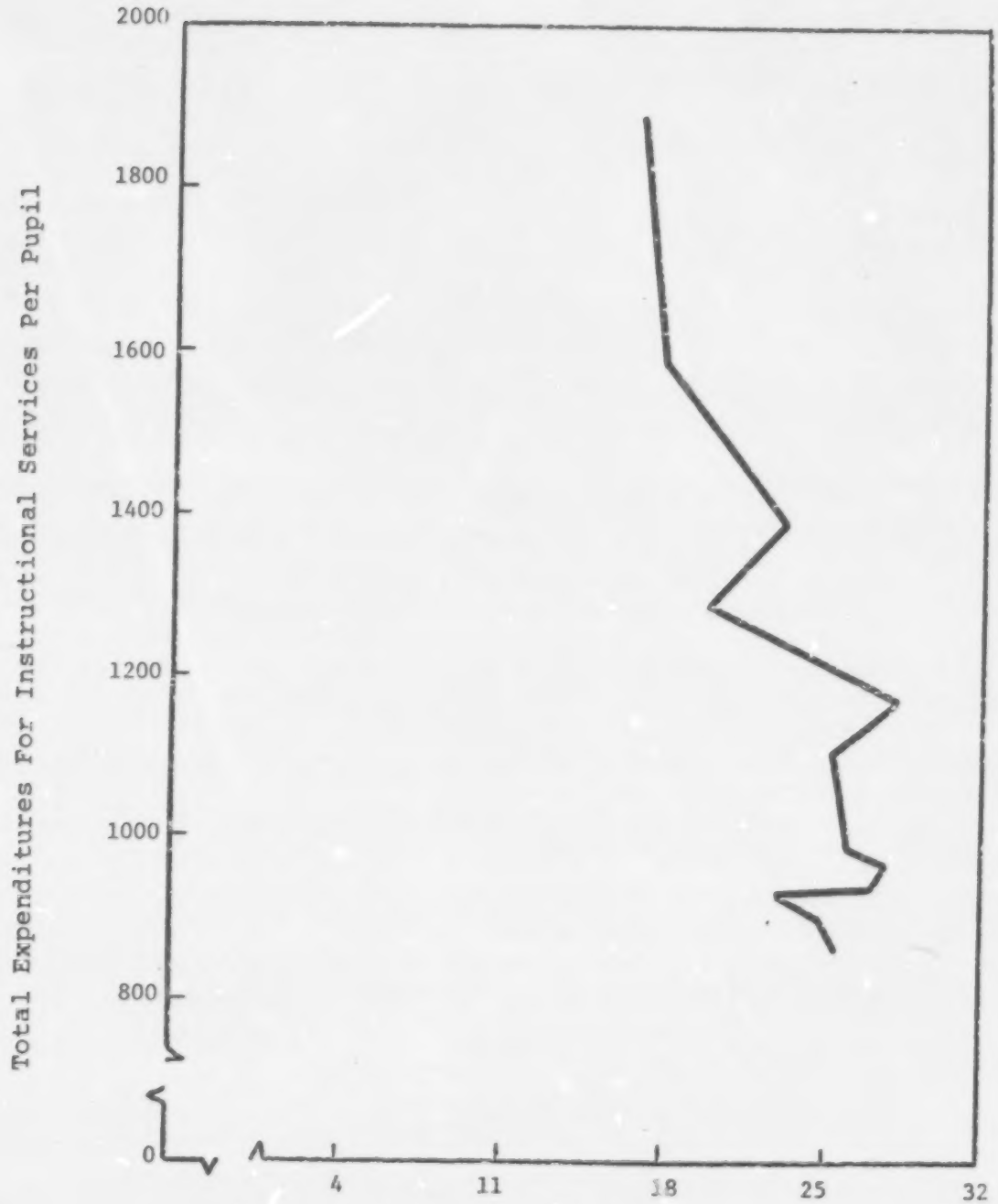
2000
1800
1600
1400
1200
1000
800
0
Total Expenditures For Instructional Services Per Pupil
4
11
18
25
32
Percent of Pupils Scoring Below Minimum Competency
On Pupil Evaluation Performance (PEP)
Reading Test - Grade 6

FIGURE 4.31

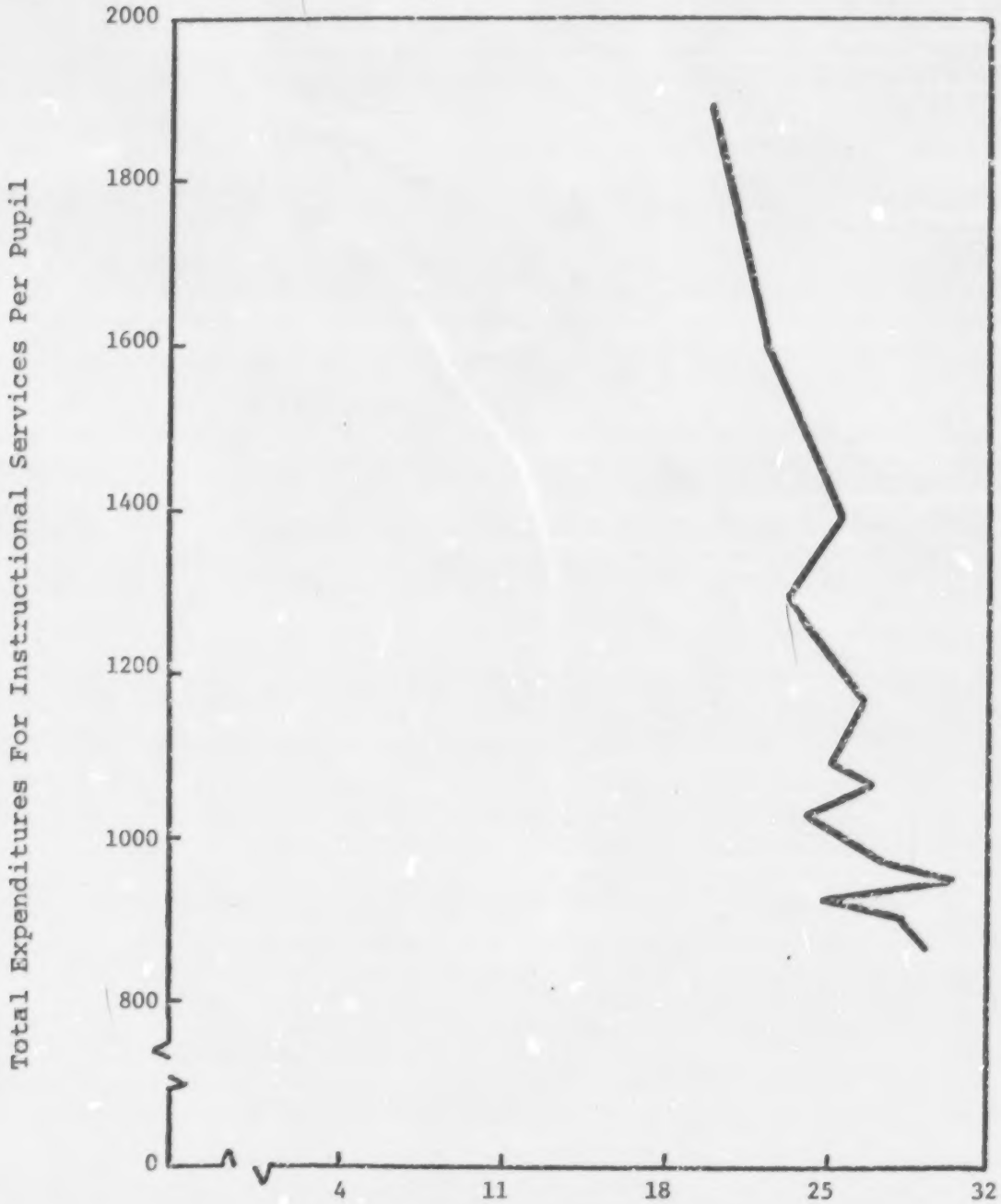
Total Expenditures For Instructional Services Per Pupil
2000
1800
1600
1400
1200
1000
800
0
4
11
18
25
32
Percent of Pupils Scoring Below Minimum Competency
On Pupil Evaluation Performance (PEP)
Reading Test - Grade 9

FIGURE 4.32

5. Conclusion

5.1 Basic Findings

For the school districts studied herein, high expenditure districts (tenth decile) spent twice as much as low expenditure districts (first decile), or $2538 per pupil compared to $1148. High expenditure districts compared to low expenditure level districts spent significantly more per pupil for textbooks, were significantly more wealthy ($98,841 per pupil compared to $27,272), taxed themselves almost twice as much (22.26 mills to 12.70), paid elementary teachers higher salaries ($16,832 compared to $10,299), paid secondary teachers higher salaries ($18,072 to $11,248), employed significantly more professional staff per 1,000 pupils (system-wide, 73 per 1,000 pupils to 53), had teachers with significantly more education (39% had masters degrees compared to 23%), and had pupils who scored significantly higher on reading and mathematics tests. These findings clearly indicate that any approach which results in increasing the expenditure level gap among school districts creates significant differences in school quality related measures. The consequences of these differences is to create inequality of educational opportunity.

First, as expenditure levels increase, so do per pupil expenditures for instructional services. The relationship is high, positive, and very significant. However, as per pupil expenditures for instructional services increase, per pupil expenditures for textbooks increase, but per pupil expenditures for instructional

materials and supplies do not. Second, as per pupil expenditures increase, professional salaries increase at a faster rate than pupil/staff ratios. Third, designers of State aid finance plans could create simulation models to see the effects of decisions upon quality related variables rather than just tax equity, closing the expenditure level gap, etc. Such a model could yield a quality related variables profile whose characteristics would be useful in determining the equalizing or disequalizing effects of certain State aid finance policies and plans. Fourth, expenditure level differences at the lower end of the expenditure level continuum result in different effects upon school quality related variables than expenditure level differences at the upper end. For example, an expenditure level difference between the two lowest groups produces significant differences in professional staffing ratios whereas a much higher difference between the two highest groups does not.

5.2 A Re-examination of the Current School Finance Reform Remedies

At the present time, two competing concepts are being adopted by states undertaking to reform their school financing systems. In one approach, commonly referred to as district power equalizing (DPE), tax effort is equalized so that one mill raises equivalent amounts of money. In an alternate approach, commonly exemplified by the Serrano II decision, the emphasis is on providing a smaller inter-district per pupil expenditure disparity. The reason for the

differences in approach lies less in the vagaries of the state courts than in the dearth of evidence demonstrating that per pupil expenditures affect school quality. Even less evidence exists that illustrates the quantitative and qualitative differences that accompany a given change in the per pupil expenditure level of, say $100. Nor is the difference in approaches trivial. DPE is its pure form would permit, even encourage differential expenditures as a function of community choice. The evidence of this research would argue that solution is unacceptable.

A recent study by Brown, et al., indicates that even among reform states, disparities have not been reduced, and have instead increased.

> Viewing the nation as a whole in 1975, then, substantial disparities remain, and their link to local wealth continues. We should expect that a different picture would emerge when we focus on the 20 states that passed school finance reform legislation. In fact, however, in 12 of these states disparities actually increased between 1970 and 1975. Of the other 8, most were already fairly well equalized.[50]

In part, this was due to the subversion of equity reform into property-tax relief. But regardless of the cause, it is clear that the nation's schools are becoming even more disparate than before in average expenditures per child, and that those disparities are based upon wealth. The only question, then, is the educational significance of those differences in expenditures.

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[50] Lawrence L. Brown, III, et al. School Finance Reform in the Seventies: Achievement and Failures, September 30, 1977 ASPE, HEW Washington, DC, p. 3.

What do schools get for higher expenditures per child? The answer is, very different things. By spending twice as much as low expenditure districts, high expenditure districts enjoy twice as many professional staff members per 1,000 students, almost one-quarter as many staff with masters degrees, greater tenure and experience, and higher test scores by students (although that may be a product of a host of other variables). But clearly we cannot look solely at the aggregrate average per pupil expenditure for the district to determine inequities, nor can we expect smaller average inter-district per pupil expenditures to lead to greater equality of educational opportunity. The results here suggest a refinement of the expenditure approach is in order.

Although it may be argued that the characteristics measured in this research are poor surrogates for measuring quality of schooling or equality of educational opportunity, let us stress their one virtue: when one looks at the differences between top decile per pupil expenditure schools and bottom decile schools, there are observable disparities between the schools on those measures. Perhaps altering those expenditures will not change the achievement scores of children, or, more likely, that it will take several years before the effects will show up.[51] However, reducing the total average per pupil expenditure does nothing to cause a school district to change its internal distribution pattern (which may be wasteful or ineffective) and clearly does that which we now know does not work, i.e., it allocates equal dollars to produce effects in each of the measurable variables that are disparate. Thus, the results here indicate, first, that any school finance plan that does not attempt to

[51] Coulson, J.E. The Third Year of Emergency School Aid Act (ESAA) Implementation March, 1977, USOE Washington, DC.

limit the disparity of per pupil expenditures will not have an effect upon the observable quality surrogates utilized here. Second, limiting the average per pupil expenditure is not a refined enough procedure to accomplish the goals of the school finance reform movement. Although property tax relief and equal revenues for equal millage rates are notable and desirable goals in themselves, they will be little or no impact upon the type of schools indicated by expenditures disparities.

5.3 Application of the Findings

If replication confirms these findings, of what value are they? First, it is clear that state equalization aid should be differentially targeted. For example, regardless of the average per pupil expenditure disparity, instructional materials and supply expenditures are not substantially different. Supplementary state funds spent in this way would be nothing short of mismanagement. We now know that as district expenditures go up, the first use is to lower pupil-teacher ratios. Knowledge of this sort may enable a legislature or state department of education to mandate a funding plan requiring money to be funneled into certain areas, for example, achieving a certain pupil-teacher ratio, before local financial discretion is permitted with state funds.

Second, designers of state aid plans should be able to create simulation models that would be much more revealing about the impact of their decisions upon educational programs. For example, they could hypothesize that a per

pupil expenditure disparity of $836 for districts of $1,000 - $2,000 average expenditures would result in a total professional staff/ADA difference of 16, based upon median values. Thus a profile of characteristics could be developed which would indicate where the money would be spent, at least for certain classes of school districts, if not for specific districts.

The courts have so far been reluctant to mandate funding programs based upon pupil need. But perhaps the courts would be receptive to the notion of a program standard that would be implimented prior to the funds being used for property tax relief.

Such a simulation may also prove useful to states whose treasuries do not have the ability to pump massive increases in aid into a new state funding formula. Thus it may permit a more parsimonious state aid program, by actually reducing compensatory aid where expenditure differentials are not producing significant differences in quality related variables.

Third, it is now quite clear that an expenditure level difference changes its significance at low expenditure levels ($1131 per pupil) compared to high expenditure levels (over $2,580 per child). For example, although the $67 expenditure differential between Group 1 and Group 2 produces a significant difference in total professional staff per WADA, a $81 expenditure level differential between Groups 9 and 10 fails to do so.

To extend this argument further, a large dollar difference in high expenditure districts may be permissible without affecting equality of educational opportunity at the upper range of expenditures. This latter argument is especially important in the light of Serrano or Hobson, which argue for reduction of all school district disparities in expenditures per child to some nominal amount. Rather than on interval scale, we should have a nominal scale that permits us to understand the magnitude of the differences. Thus expenditure extremes at the low expenditure end would be less tolerable than those at the high end. This would also end the argument of those fortuitously property wealthy districts that the school finance movement is antithetical to "lighthouse schools" which desire the best, i.e., the most expensive. It is important to remember that more variation exists within the high expenditure Group 7 than between Group 1 and 7, although it appears that such add-ons do not produce further educational quality related changes.

Fourth, Brown projects that the costs of reducing the disparity to 20 percent of the current levels would cost $5.4 billion in 1975.[52] Settling for leveling to 30 percent of the high spenders would still cost $2.55 billion nationally. Thus, the unrealistically high costs of convergence, (even with the most disparate districts removed off each end) urge an even closer look at the educational need to reduce such disparities. If it is possible that expenditures at the higher end are simply maintaining the same ratio of disparity as evidenced at lower expenditure levels, then it might be argued that low expenditure districts need only to achieve parity to the level of expenditure in each variable that causes an effect.

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[52] Brown, L.L., et al. School Finance Reform in the Seventies: Achievements and Failures, September 30, 1977 ASPE, HEW Washington, DC, p. 3.

Fifth, permitting the wealthy to maintain their expenditure advantages in the upper ranges (since they seem to even in reform states) may pay off handsomely by relaxing the political opposition and permitting greater "leveling-up" to at least top-quartile expenditures. Such "leveling-up" may prevent detrimental affects upon high expenditure districts of school reform while correcting the great disparities of the past. The meager evidence of this research indicates a need to equalize up, not equalize down. This will not only permit equalization costs to be affordable, but may prevent "high SES" flight to private schools.